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Surface Trawl Catch Data From the Lower Fraser River at Queens Reach During 1987 and 1988

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by

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ABSTRACT

Whitehouse, T. R. and C. D. Levings. 1989. Surface trawl catch data from the lower Fraser River at Queens Reach during 1987 and 1988. Can. Data Rep. Fish. Aquat. Sci. 768: 53 p.

Data are presented on the seasonal abundance and lateral distribution of fish species captured during a surface trawl sampling program on the Lower Fraser River at Queens Reach, near Port Mann. Sampling was initiated in September 1987 and continued weekly to the end of August 1988. A total of 80 sampling traps comprised of 424 individual tows were made. During the study over 33,000 individual specimens representing 10 families and 25 species of fish were identified. A summary of the coded wire tag information is given for adipose fin clipped marked fish captured during the study.

Key words: Fraser River, surface trawling, juvenile salmonids, migration

RÉSUMÉ

Whitehouse, T. R. and C. D. Levings. 1989. Surface trawl catch data from the lower Fraser River at Queens Reach during 1987 and 1988. Can. Data Rep. Fish. Aquat. Sci. 768: 53 p.

Les auteurs présentent des données sur l'effectif selon les saisons et la répartition latérale d'espèces de poissons capturés lors d'échantillonnages au chalut de surface dans le bas Fraser, plus précisément dans le Queens Reach, près de Port Mann. Au total, 424 échantillonages (80 sorties), ont eu lieu, hebdomadairement, depuis septembre 1987 jusqu'à la fin d'août 1988. Au cours de l'étude, plus de 33 000 spécimens, représentant 10 familles et 25 espèces, ont été identifée. En outre, on résume les résultats de l'examen des fils codés posés sur les poissons sans nageoire adipeuse capturés pendant l'étude.

Mots clés: Fraser, chalutage de surface, salmonidés juvéniles, migration

INTRODUCTION

The Lower Fraser River serves as a migratory corridor for hundreds of millions of adult and juvenile fish moving between freshwater and marine environments annually. Northcote (1974) reviewed the distribution of fish species present within the Lower Fraser River, and described the timing of movement through the lower river by the major migratory species. Depending on the year anywhere from 4 to 10 million adult Pacific salmon (genus Oncorhynchus) and 69 to 290 million juvenile salmon will pass through the reaches of the lower river. A study undertaken in 1978 and 1979 (Beak Consultants, 1981) is the only work describing juvenile salmon utilization of Lower Fraser River off-shore mainstem habitat. The Beak study outlined the importance of the mainstem channel of the Fraser River with respect to the transport of juvenile salmonids to, or potentially, past estuarine rearing areas. The present study further examines the utilization of the Fraser River mainstem by ocean bound migrant juvenile salmonids.

This report describes the results of a trawl sampling program carried out for a period of one year on the Lower Fraser River. In September 1987 sampling was initiated on the Lower Fraser River immediately downstream from the Port Mann Bridge, at Queens Reach (Figure 1). Weekly sampling was maintained to the end of August 1988. Sampling assessed the temporal abundance and cross channel distribution of fish species present in the surface waters of the Lower Fraser River. Subsamples were collected from the total catch to provide size and diet information (to be reported elsewhere) on the fish species captured. Marked fish (adipose fin clipped) were sampled to determine their hatchery of origin and downstream transit times.

METHODS AND MATERIALS

A single boat stern trawling program was initiated on the Fraser River at Queens Reach (Figure 1), approximately 31 km upstream from the river mouth, in September 1987. Sampling continued on a weekly basis until the end of August 1988, with an increased sampling frequency during the period of juvenile salmonid migration (increasing from 1 to 2-3 trips weekly from March to August 1988). A total of 80 sampling trips were made during the study period. The catch of all fish, by sampling date, tow, and transect line are presented in Table 3. Names and codes of variables used in the catch record (Table 3) are defined in Tables 1 and 2.

Five transects, in parallel with the mid-channel axis, were sampled on each trip (Figure 2). Sampling transects covered both near-shore and mid-channel waters. Lines "A" and "E" were located as close as possible to the north and south shores, respectively. Proximity to the shoreline was limited by a wood-chip barge loading facility on the south side of the river, and a booming ground and barge loading ramp on the north side. Lines "B", "C", and "D" covered mid-channel waters. Sampling was restricted to the low water flow period associated with the daily higher high tide. This low flow "window", the time around high slack water when river discharge velocities were reduced by the flooding tide, was the only period during which the trawl gear could be successfully fished without the boat being swept downstream. Selection of low

velocity windows was aided by consulting predicted discharge and velocity tables produced by Public Works Canada (1988).

The trawl nets used during this study are described below. The nets were modified to fish on the surface by the addition of two 35 cm diameter floats to the headline. The gear was fished 35 m off of the stern of the towing vessel. Tow time, in minutes, was constrained by a number of considerations. While attempts were made to achieve standard tow times, factors such as tidal stage, vessel traffic, and fish abundance necessitated variation in duration of towing times.

Following each completed tow, the net was hauled in and the catch was brought on board and placed in a 50 litre tub of river water. The catch was then enumerated by species, and subsamples were preserved for subsequent weight-length, diet, or stock analyses in the laboratory. Subsamples were preserved in either a 10% formaldehyde solution (samples for weight-length and diet analyses) or 100% ethanol (stock identification research samples of juvenile sockeye for Dr. M. Henderson, D.F.O, Biological Sciences Branch). Large fish (> 150 mm FL) were returned to the river following measurement of fork length (to nearest mm). In addition to fork length, wet weight was recorded for juvenile chinook and coho salmon which were released. Weights were measured in the field using a K-TRON Model DS-10 portable electronic balance. Specimens to be weighed were anaesthetized by immersion in a solution of 5 ml of 2-phenoxy methanol in 20 l of river water. When the fish were immobilized they were gently blotted on a damp paper towel, weighed, and returned to a tub of river water for recovery prior to release.

Measurement of the relative towing velocity was obtained using a Marsh-McBirney Model 210D portable water flow meter. The flow meter sensor was lowered into the water off of the bow of the towing vessel approximately 1 m forward of the hull. This position was found to generate the most stable current readings, as turbulence generated by the hull was minimal here compared to any other location around the boat. Towing velocity was measured after the net was fully deployed and engine revolutions had stabilized. Towing speed ranged from 0.6 $m*s^{-1}$ to 1.1 $m*s^{-1}$. Surface temperature (^{o}C) was measured using a hand-held thermometer.

In the laboratory, formaldehyde-preserved samples were rinsed in tap water for 24 hours. Weights, measured using a K-Tron DS-10 balance, and fork lengths (nearest mm) of preserved fish were recorded and each specimen assigned a uniquely numbered identification tag. Weight and length information will be reported elsewhere. All preserved specimens were then transferred to a storage solution of 40% iso-propanol and tap water. Adipose clipped juvenile salmonids were separated from the general subsample for determination of the hatchery of origin from the coded wire tags. A summary of the coded wire tag (CWT) information from adipose clipped fish is presented in Table 4.

Description of the Sampling Gear used during 1987 and 1988

During the trawl sampling program at Queens Reach two different nets were

used. Prior to Trip 21 on January 26, 1988, a 3m x 3m mouth opening beam trawl was employed. This gear is described by Gjernes (1979). All sampling after, and including, Trip 21 was carried out using the midwater trawl net described below.

The midwater trawl net used during this study was of a square design, consisting of four identical nylon mesh panels tapering down to the codend (Figure 3). Each side panel was comprised of seven sub-panels of varying mesh size which were progressively reduced in width towards the codend. The codend was lined with 0.5 cm knotless nylon mesh so as to retain the smallest free swimming juvenile fish encountered. The codend was tied off with a codline, and was left to trail freely behind the net. Panel mesh size varied from 9.0 cm stretched mesh at the mouth of the net to 0.5 cm stretched mesh in the codend (see Figure 3 for panel dimensions). The effective mouth opening of the net, 4m x 4m, was maximized by using 1.25m x 0.4m steel trawl doors.

Two different boats were used to tow the surface trawling gear during the course of the program. The FRV ACTIVE LASS, a 12 m west coast troller, and the LITTLE GAFFER, an 11 m gillnetter were employed. Differences in the stern deck configuration required unique rigging of the gear on each vessel. Figure 4 gives a schematic representation of the system used to rig the trawl net on the vessels used. The main towing warps (7/16" galvanized steel rope core cable, port and starboard) were fed from the winch drum through open blocks located on the fore-aft centerline of the stern deck or transom. The warps were then fed through a second set of closed blocks located on side mounted towing davits. In the case of the LITTLE GAFFER, towing davits had to be fabricated, as they are not a component of the standard rigging for this type of boat. The towing davits were equipped with a lanyard and stainless steel snap ring which acted as door hangers, so that the main towing warp could be disconnected from the trawl doors on hauling and pulled onto the deck or drum. To facilitate uncoupling, the main towing warps were connected to the trawl doors with a Gee hook and ring, which allowed the doors to be disconnected when the load due to towing was relieved.

The upper and lower legs of the trawl net were attached to the trawl doors, using 3/8" stainless steel snap rings to connect the rope net legs to 1/4" cable legs affixed to the door. A second set of cable legs, comprising a bridle connecting the Gee ring and towing legs, allowed the towing warp to be detached from the doors (following the unloading of net drag) and wrapped onto the drum, or hauled onto the deck.

In addition to the two large floats attached to the headline of the midwater trawl, four smaller 15 cm diameter floats were fixed along the headline at equal distances to ensure that the headline did not sag below the surface. The footrope was weighted with 19 mm leadline and a single 5 kg cannonball lead weight on each of the port and starboard sides. In conditions of strong currents ($> 0.6\ m*s^{-1}$), an additional 9 kg lead cannonball was attached to the bottom of each trawl door to keep the gear properly oriented in the water.

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Table 1. Description of the variables and codes presented in catch data.

VARIABLE NAME	VARIABLE DESCRIPTION	CODE
TRIP	Sequential sampling trip number	
DATE	Sampling date (YYMMDD)	
TOW	Sequential tow number by trip	
LINE	Sampling line	
NETIN	Time at start of tow (PST)	
NETOUT	Time at end of tow (PST)	
LTOW	Duration of tow (minutes)	
FLOW	Towing speed ($m*s^{-1}$)	
SURFT	Surface temperature (^{o}C)	
SPECIES	Species code (defined in Table 2)	
STAGE	Life history stage (defined below)	
ORIGIN	Marked or unmarked fish	
NUMBER	Catch by species, stage, and origin	
STAGE	Adult	ad
	Smolt	sm
	Fry	fr
	Juvenile	ju
ORIGIN	Adipose clipped	h
	Missing data	.

Table 2. Scientific and common names and species codes of fishes collected from the Fraser River, by surface trawling in 1987-1988.

FAMILY and Scientific Name	Common Name	Species Code
PETROMYZONTIDAE		
Lampetra genus	unidentified lamprey	lamp
ACIPENSERIDAE		
Acipenser transmontanus	white sturgeon	stur
CLUPEIDAE		
Clupea harengus pallasi	pacific herring	herr
SALMONIDAE		
Oncorhynchus clarki clarki	cutthroat trout *	cutt
O. gorbuscha	pink salmon	pink
O. keta	chum salmon	chum
O. kisutch	coho salmon	coho
O. mykiss	rainbow trout *	rain
O. nerka	sockeye salmon	sock
O. tshawytscha	chinook salmon	chin
Salvelinus malma	dolly varden char	doll
OSMERIDAE	unidentified smelt	smel
Hypomesus pretiosus	surf smelt	surf
Spirinchus thaleichthys	longfin smelt	lfsm
Thaleichthys pacificus	eulachon	ooli
CYPRINIDAE		
Mylocheilus caurinus	peamouth chub	peam
Ptychocheilus oregonensis	northern squawfish	squa
Richardsonius balteatus	redside shiner	reds
CATOSTOMIDAE	unidentified sucker	suck
Catostomus columbianus	bridgelip sucker	brid
C. macrocheilus	largescale sucker	lssu
GASTEROSTEIDAE		
Gasterosteus aculeatus	threespine stickleback	stic
COTTIDAE		
Cottus asper	prickly sculpin	scul
Leptocottus armatus	pacific staghorn sculpin	stag
PLEURONECTIDAE		
Platichthys stellatus	starry flounder	star

* see Kendall, 1988.

Table 3. Surface trawl catch data from the Fraser River at Queens Reach, during 1987-1988.

CATCH DATA - SURFACE TRAWLING
FRASER RIVER AT QUEENS REACH, 1987 - 1988

TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
1	870921	1	e	1350	1405	15	.	.	.	.	.	0
1	870921	2	d	1415	1435	20	.	.	.	.	.	0
1	870921	3	c	1445	1505	20	.	.	.	.	.	0
1	870921	4	b	1512	1520	8	.	.	.	.	.	0
1	870921	5	a	1530	1600	30	.	.	.	.	.	0
1	870921	6	e	1640	1700	20	.	.	.	.	.	0
1	870921	7	d	1710	1730	20	.	.	.	.	.	0
1	870921	8	c	1740	1800	20	.	.	.	.	.	0
1	870921	9	b	1810	1830	20	.	.	.	.	.	0
1	870921	10	c	1840	1900	20	.	.	.	.	.	0
2	870923	1	e	1930	1950	20	.	.	.	.	.	0
2	870923	2	e	2000	2020	20	.	.	.	.	.	0
2	870923	3	d	2030	2050	20	.	.	.	.	.	0
2	870923	4	c	2105	2125	20	.	.	.	.	.	0
2	870923	5	b	2135	2155	20	.	.	.	.	.	0
2	870923	6	a	2210	2230	20	.	.	star	.	.	1
2	870923	7	a	2247	2307	20	.	.	.	.	.	0
2	870923	8	b	2320	2340	20	.	.	.	.	.	0
3	870929	1	e	1945	2005	20	.	.	.	.	.	0
3	870929	2	d	2015	2035	20	.	.	stic	.	.	1
3	870929	3	c	2045	2100	15	.	.	.	.	.	0
3	870929	4	b	2110	2130	20	.	.	.	.	.	0
3	870929	5	a	2140	2205	25	.	.	.	.	.	0
3	870929	6	e	2235	2255	20	.	.	stic	.	.	1
3	870929	7	d	2315	2325	10	.	.	.	.	.	0
4	871001	1	e	1940	2000	20	.	.	stic	.	.	1
4	871001	2	d	2012	2035	23	.	.	.	.	.	0
4	871001	3	c	2045	2105	20	.	.	.	.	.	0
4	871001	4	b	2112	2135	23	.	.	.	.	.	0
4	871001	5	a	2140	2200	20	.	.	.	.	.	0
4	871001	6	e	2255	2315	20	.	.	.	.	.	0
4	871001	7	d	2320	2335	15	.	.	stic	.	.	1
5	871007	1	e	1845	1905	20	.	.	.	.	.	0
5	871007	2	d	1920	1940	20	.	.	.	.	.	0
5	871007	3	c	1950	2010	20	.	.	.	.	.	0
5	871007	4	b	2018	2045	27	.	.	.	.	.	0
5	871007	5	a	2106	2130	24	.	.	.	.	.	0
5	871007	6	e	2215	2240	25	.	.	peam	.	.	1
6	871013	1	e	1845	1905	20	.	.	.	.	.	0
6	871013	2	d	1917	1940	23	.	.	.	.	.	0
6	871013	3	c	2050	2115	25	.	.	.	.	.	0
6	871013	4	b	2125	2145	20	.	.	.	.	.	0
6	871013	5	a	2155	2220	25	.	.	.	.	.	0
7	871016	1	e	1855	1920	25	.	.	star	.	.	1
7	871016	2	c	1925	1950	25	.	.	.	.	.	0
7	871016	3	a	2000	2020	20	.	.	.	.	.	0

CATCH DATA - SURFACE TRAWLING
FRASER RIVER AT QUEENS REACH, 1987 - 1988

TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
8	871021	1	e	1800	1820	20	.	.	.	.	.	0
8	871021	2	d	1830	1855	25	.	.	peam	.	.	2
8	871021	2	d	1830	1855	25	.	.	stag	.	.	1
8	871021	3	c	1910	1930	20	.	.	.	.	.	0
8	871021	4	b	1935	1950	15	.	.	.	.	.	0
8	871021	5	a	2005	2025	20	.	.	.	.	.	0
8	871021	6	e	2130	2155	25	.	.	peam	.	.	1
8	871021	6	e	2130	2155	25	.	.	stic	.	.	1
8	871021	7	d	2200	2240	40	.	.	.	.	.	0
9	871026	1	e	1916	1938	22	.	.	peam	.	.	1
9	871026	2	d	1957	2018	21	.	.	stag	.	.	1
9	871026	3	c	2024	2048	24	.	.	.	.	.	0
9	871026	4	b	2055	2122	27	.	.	peam	.	.	1
9	871026	5	a	2130	2155	25	.	.	lfsm	.	.	3
9	871026	5	a	2130	2155	25	.	.	smel	.	.	2
9	871026	5	a	2130	2155	25	.	.	surf	.	.	4
9	871026	6	a	2257	2325	28	.	.	lamp	.	.	1
9	871026	6	a	2257	2325	28	.	.	lfsm	.	.	1
9	871026	6	a	2257	2325	28	.	.	peam	.	.	1
9	871026	7	b	2335	2400	25	.	.	.	.	.	0
10	871029	1	e	1856	1922	26	.	.	.	.	.	0
10	871029	2	d	1928	1950	22	.	.	.	.	.	0
10	871029	3	c	1958	2020	22	.	.	stic	.	.	1
10	871029	4	b	2031	2052	21	.	.	lfsm	.	.	1
10	871029	4	b	2031	2052	21	.	.	stic	.	.	1
10	871029	4	b	2031	2052	21	.	.	surf	.	.	4
10	871029	5	a	2103	2129	26	.	.	lfsm	.	.	1
10	871029	5	a	2103	2129	26	.	.	stic	.	.	1
10	871029	5	a	2103	2129	26	.	.	surf	.	.	5
10	871029	6	a	2222	2246	24	.	.	smel	.	.	33
10	871029	6	a	2222	2246	24	.	.	stic	.	.	2
10	871029	7	c	2258	2322	24	.	.	.	.	.	0
11	871106	1	e	1800	1818	18	.	.	.	.	.	0
11	871106	2	d	1832	1850	18	.	.	.	.	.	0
11	871106	3	c	1900	1918	18	.	.	peam	.	.	1
11	871106	3	c	1900	1918	18	.	.	star	.	.	1
11	871106	3	c	1900	1918	18	.	.	surf	.	.	2
11	871106	4	b	1931	1954	23	.	.	lfsm	.	.	2
11	871106	4	b	1931	1954	23	.	.	peam	.	.	1
11	871106	4	b	1931	1954	23	.	.	stag	.	.	1
11	871106	4	b	1931	1954	23	.	.	star	.	.	1
11	871106	4	b	1931	1954	23	.	.	stic	.	.	2
11	871106	5	a	2004	2028	24	.	.	.	.	.	0
11	871106	6	a	2114	2139	25	.	.	star	.	.	1
11	871106	7	c	2147	2210	23	.	.	star	.	.	1
11	871106	7	c	2147	2210	23	.	.	stic	.	.	1

CATCH DATA - SURFACE TRAWLING
FRASER RIVER AT QUEENS REACH, 1987 - 1988

TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
12	871109	1	a	1840	1903	23	.	.	lfsm	.	.	11
12	871109	1	a	1840	1903	23	.	.	surf	.	.	1
12	871109	2	c	1916	1938	22	.	.	lfsm	.	.	1
12	871109	3	b	1953	2017	24	.	.	lfsm	.	.	6
12	871109	4	e	2028	2053	25	.	.	.	.	.	0
12	871109	5	d	2100	2123	23	.	.	star	.	.	1
12	871109	6	b	2133	2156	23	.	.	lfsm	.	.	1
12	871109	6	b	2133	2156	23	.	.	smel	.	.	1
12	871109	6	b	2133	2156	23	.	.	stic	.	.	1
12	871109	6	b	2133	2156	23	.	.	surf	.	.	2
12	871109	7	d	2208	2231	23	.	.	surf	.	.	1
13	871113	1	c	1747	1811	24	.	.	stic	.	.	1
13	871113	2	e	1820	1844	24	.	.	lfsm	.	.	1
13	871113	2	e	1820	1844	24	.	.	stic	.	.	1
13	871113	2	e	1820	1844	24	.	.	surf	.	.	2
13	871113	3	a	1926	1950	24	.	.	lfsm	.	.	5
13	871113	3	a	1926	1950	24	.	.	stic	.	.	2
13	871113	4	d	2002	2025	23	.	.	lfsm	.	.	2
13	871113	4	d	2002	2025	23	.	.	stic	.	.	2
13	871113	4	d	2002	2025	23	.	.	surf	.	.	1
13	871113	5	b	2041	2106	25	.	.	smel	.	.	1
13	871113	5	b	2041	2106	25	.	.	stic	.	.	2
13	871113	5	b	2041	2106	25	.	.	surf	.	.	1
13	871113	6	c	2113	2136	23	.	.	lfsm	.	.	7
13	871113	6	c	2113	2136	23	.	.	stic	.	.	3
13	871113	6	c	2113	2136	23	.	.	surf	.	.	3
13	871113	7	d	2147	2210	23	.	.	smel	.	.	8
14	871117	1	e	1815	1840	25	.	.	lfsm	.	.	7
14	871117	1	e	1815	1840	25	.	.	surf	.	.	4
14	871117	2	d	1851	1915	24	.	.	surf	.	.	2
14	871117	3	c	1925	1951	26	.	.	.	.	.	0
14	871117	4	b	1957	2020	23	.	.	lfsm	.	.	9
14	871117	4	b	1957	2020	23	.	.	surf	.	.	1
14	871117	5	a	2028	2051	23	.	.	chin	ad	.	1
14	871117	5	a	2028	2051	23	.	.	lfsm	.	.	18
14	871117	5	a	2028	2051	23	.	.	smel	.	.	9
14	871117	5	a	2028	2051	23	.	.	surf	.	.	1
14	871117	6	e	2105	2128	23	.	.	.	.	.	0
14	871117	7	d	2132	2159	27	.	.	lfsm	.	.	2
14	871117	7	d	2132	2159	27	.	.	scul	.	.	1
14	871117	7	d	2132	2159	27	.	.	star	.	.	1
14	871117	7	d	2132	2159	27	.	.	surf	.	.	3
15	871125	1	a	1755	1815	20	.	.	lfsm	.	.	9
15	871125	1	a	1755	1815	20	.	.	stic	.	.	1
15	871125	1	a	1755	1815	20	.	.	surf	.	.	3
15	871125	2	b	1825	1905	40	.	.	lfsm	.	.	4

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
15	871125	2	b	1825	1905	40	.	.	stic	.	.	4
15	871125	2	b	1825	1905	40	.	.	surf	.	.	3
15	871125	3	e	2030	2050	20	.	.	lfsm	.	.	1
15	871125	3	e	2030	2050	20	.	.	stic	.	.	2
15	871125	3	e	2030	2050	20	.	.	surf	.	.	4
15	871125	4	d	2100	2120	20	.	.	chum	ad	.	1
15	871125	4	d	2100	2120	20	.	.	lfsm	.	.	1
15	871125	4	d	2100	2120	20	.	.	stic	.	.	3
15	871125	5	c	2135	2200	25	.	.	smel	.	.	3
15	871125	5	c	2135	2200	25	.	.	stic	.	.	1
17	871210	1	e	1855	1915	20	.	.	lfsm	.	.	1
17	871210	1	e	1855	1915	20	.	.	star	.	.	2
17	871210	1	e	1855	1915	20	.	.	stic	.	.	1
17	871210	1	e	1855	1915	20	.	.	surf	.	.	5
17	871210	2	d	1925	1945	20	.	.	lfsm	.	.	1
17	871210	3	c	2050	2110	20	.	.	stic	.	.	1
17	871210	3	c	2050	2110	20	.	.	surf	.	.	4
17	871210	4	b	2120	2140	20	.	.	lfsm	.	.	17
17	871210	4	b	2120	2140	20	.	.	stic	.	.	1
17	871210	4	b	2120	2140	20	.	.	surf	.	.	1
17	871210	5	a	2200	2220	20	.	.	lfsm	.	.	1
17	871210	5	a	2200	2220	20	.	.	peam	.	.	1
17	871210	5	a	2200	2220	20	.	.	surf	.	.	50
17	871210	6	b	2240	2300	20	.	.	lfsm	.	.	3
17	871210	6	b	2240	2300	20	.	.	smel	.	.	9
17	871210	7	a	2310	2330	20	.	.	smel	.	.	12
17	871210	7	a	2310	2330	20	.	.	surf	.	.	35
17	871210	7	a	2310	2330	20	.	.	surf	.	.	11
18	871217	1	e	1802	1825	23	.	.	lfsm	.	.	1
18	871217	1	e	1802	1825	23	.	.	smel	.	.	11
18	871217	2	d	1835	1855	20	.	.	surf	.	.	6
18	871217	3	c	1912	1933	21	.	.	lfsm	.	.	1
18	871217	3	c	1912	1933	21	.	.	surf	.	.	2
18	871217	4	b	1945	2005	20	.	.	surf	.	.	12
18	871217	5	a	2020	2045	25	.	.	lfsm	.	.	1
18	871217	5	a	2020	2045	25	.	.	smel	.	.	8
18	871217	5	a	2020	2045	25	.	.	surf	.	.	15
18	871217	6	e	2057	2120	23	.	.	smel	.	.	28
18	871217	6	e	2057	2120	23	.	.	surf	.	.	15
18	871217	7	a	2130	2152	22	.	.	smel	.	.	147
18	871217	7	a	2130	2152	22	.	.	stic	.	.	1
18	871217	7	a	2130	2152	22	.	.	surf	.	.	33
19	880107	1	e	1710	1730	20	.	.	lfsm	.	.	1
19	880107	2	d	1750	1810	20	.	.	lfsm	.	.	1
19	880107	3	c	1825	1845	20	.	.	surf	.	.	2
19	880107	4	b	1855	1915	20	.	.	lfsm	.	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
19	880107	4	b	1855	1915	20	.	.	surf	.	.	6
19	880107	5	a	1930	1950	20	.	.	lfsm	.	.	2
19	880107	5	a	1930	1950	20	.	.	surf	.	.	16
19	880107	6	b	2005	2030	25	.	.	.	.	.	0
19	880107	7	a	2040	2100	20	.	.	lfsm	.	.	2
19	880107	7	a	2040	2100	20	.	.	smel	.	.	19
19	880107	7	a	2040	2100	20	.	.	surf	.	.	13
20	880114	1	a	1800	1820	20	.	.	smel	.	.	18
20	880114	1	a	1800	1820	20	.	.	stic	.	.	1
20	880114	1	a	1800	1820	20	.	.	surf	.	.	17
20	880114	2	b	1835	1850	15	.	.	surf	.	.	6
20	880114	3	c	1900	1920	20	.	.	surf	.	.	3
20	880114	4	d	1928	1940	12	.	.	surf	.	.	1
20	880114	5	e	2000	2020	20	.	.	lfsm	.	.	9
21	880128	1	b	1800	1815	15	.	3.0	lfsm	.	.	1
21	880128	1	b	1800	1815	15	.	3.0	surf	.	.	18
21	880128	2	c	1845	1900	15	.	3.0	stic	.	.	1
21	880128	2	c	1845	1900	15	.	3.0	surf	.	.	10
21	880128	3	a	1920	1940	20	.	3.0	lfsm	.	.	1
21	880128	3	a	1920	1940	20	.	3.0	smel	.	.	38
21	880128	3	a	1920	1940	20	.	3.0	surf	.	.	13
21	880128	4	d	2010	2018	8	.	3.0	lfsm	.	.	1
21	880128	4	d	2010	2018	8	.	3.0	surf	.	.	14
22	880211	1	d	1000	1010	10	.	2.1	smel	.	.	42
22	880211	1	d	1000	1010	10	.	2.1	stic	.	.	1
22	880211	1	d	1000	1010	10	.	2.1	surf	.	.	11
22	880211	2	c	1035	1050	15	.	2.1	smel	.	.	19
22	880211	2	c	1035	1050	15	.	2.1	stic	.	.	1
22	880211	2	c	1035	1050	15	.	2.1	surf	.	.	12
22	880211	3	d	1110	1115	5	.	2.1	smel	.	.	4
22	880211	3	d	1110	1115	5	.	2.1	stic	.	.	2
22	880211	3	d	1110	1115	5	.	2.1	surf	.	.	10
22	880211	4	c	1125	1143	18	.	2.1	smel	.	.	32
22	880211	4	c	1125	1143	18	.	2.1	stic	.	.	3
22	880211	4	c	1125	1143	18	.	2.1	surf	.	.	21
22	880211	5	c	1305	1313	8	.	2.1	smel	.	.	1
22	880211	5	c	1305	1313	8	.	2.1	stic	.	.	1
22	880211	5	c	1305	1313	8	.	2.1	surf	.	.	13
23	880224	1	e	1223	1243	20	.	.	smel	.	.	85
23	880224	1	e	1223	1243	20	.	.	stic	.	.	7
23	880224	1	e	1223	1243	20	.	.	surf	.	.	11
23	880224	2	b	1312	1332	20	.	.	smel	.	.	10
23	880224	2	b	1312	1332	20	.	.	surf	.	.	10
23	880224	3	c	1358	1418	20	.	.	chum	fr	.	1
23	880224	3	c	1358	1418	20	.	.	stic	.	.	1
23	880224	3	c	1358	1418	20	.	.	surf	.	.	21

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
24	880225	1	c	1115	1135	20	.	5	chum	fr	.	4
24	880225	1	c	1115	1135	20	.	5	lfsm	.	.	29
24	880225	1	c	1115	1135	20	.	5	pink	fr	.	1
24	880225	1	c	1115	1135	20	.	5	smel	.	.	8
24	880225	1	c	1115	1135	20	.	5	surf	.	.	12
24	880225	2	a	1210	1230	20	.	5	lamp	ad	.	1
24	880225	2	a	1210	1230	20	.	5	stic	.	.	2
24	880225	2	a	1210	1230	20	.	5	surf	.	.	16
24	880225	3	e	1245	1305	20	.	5	herr	.	.	1
24	880225	3	e	1245	1305	20	.	5	smel	.	.	1
24	880225	3	e	1245	1305	20	.	5	stic	.	.	4
24	880225	3	e	1245	1305	20	.	5	surf	.	.	9
24	880225	4	b	1330	1350	20	.	5	smel	.	.	6
24	880225	4	b	1330	1350	20	.	5	surf	.	.	12
25	880229	1	e	1625	1645	20	.	.	.	.	.	0
26	880301	1	a	1545	1555	10	.	.	surf	.	.	2
26	880301	2	b	1610	1630	20	.	.	.	.	.	0
26	880301	3	d	1645	1705	20	.	.	chum	fr	.	4
26	880301	3	d	1645	1705	20	.	.	surf	.	.	9
26	880301	4	e	1720	1740	20	.	.	chum	fr	.	4
26	880301	4	e	1720	1740	20	.	.	lfsm	.	.	2
26	880301	4	e	1720	1740	20	.	.	pink	fr	.	1
26	880301	4	e	1720	1740	20	.	.	stic	.	.	1
26	880301	4	e	1720	1740	20	.	.	surf	.	.	2
26	880301	5	a	1755	1825	30	.	.	chum	fr	.	1
26	880301	5	a	1755	1825	30	.	.	lfsm	.	.	20
26	880301	5	a	1755	1825	30	.	.	stic	.	.	1
26	880301	5	a	1755	1825	30	.	.	surf	.	.	28
27	880303	1	a	1550	1610	20	.	.	chum	fr	.	2
27	880303	1	a	1550	1610	20	.	.	stic	.	.	1
27	880303	1	a	1550	1610	20	.	.	surf	.	.	9
27	880303	2	b	1630	1650	20	.	.	chum	fr	.	2
27	880303	2	b	1630	1650	20	.	.	smel	.	.	38
27	880303	3	c	1706	1726	20	.	.	chum	fr	.	8
27	880303	3	c	1706	1726	20	.	.	pink	fr	.	5
27	880303	3	c	1706	1726	20	.	.	smel	.	.	15
27	880303	4	d	1745	1800	15	.	.	pink	fr	.	1
27	880303	4	d	1745	1800	15	.	.	smel	.	.	4
27	880303	4	d	1745	1800	15	.	.	stic	.	.	1
27	880303	5	e	1815	1835	20	.	.	lfsm	.	.	16
27	880303	5	e	1815	1835	20	.	.	surf	.	.	8
28	880307	1	a	1952	2008	16	.	.	chum	fr	.	2
28	880307	1	a	1952	2008	16	.	.	lfsm	.	.	14
28	880307	1	a	1952	2008	16	.	.	surf	.	.	2
28	880307	2	b	2022	2042	20	.	.	chum	fr	.	3
28	880307	2	b	2022	2042	20	.	.	lfsm	.	.	20

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
28	880307	2	b	2022	2042	20	.	.	surf	.	.	1
28	880307	3	c	2057	2110	13	.	.	lfsm	.	.	10
28	880307	4	d	2126	2146	20	.	.	lfsm	.	.	18
28	880307	4	d	2126	2146	20	.	.	smel	.	.	1
28	880307	4	d	2126	2146	20	.	.	stag	.	.	1
28	880307	5	e	2155	2213	18	.	.	chum	fr	.	1
28	880307	5	e	2155	2213	18	.	.	lfsm	.	.	13
28	880307	5	e	2155	2213	18	.	.	pink	fr	.	2
28	880307	5	e	2155	2213	18	.	.	stic	.	.	1
29	880310	1	a	745	806	21	0.62	.	chin	fr	.	1
29	880310	1	a	745	806	21	0.62	.	chum	fr	.	2
29	880310	1	a	745	806	21	0.62	.	lfsm	.	.	3
29	880310	1	a	745	806	21	0.62	.	surf	.	.	1
29	880310	2	b	820	842	22	0.62	.	chin	fr	.	2
29	880310	2	b	820	842	22	0.62	.	chum	fr	.	4
29	880310	2	b	820	842	22	0.62	.	lfsm	.	.	7
29	880310	2	b	820	842	22	0.62	.	pink	fr	.	2
29	880310	3	c	855	917	22	0.67	.	chum	fr	.	18
29	880310	3	c	855	917	22	0.67	.	lfsm	.	.	1
29	880310	3	c	855	917	22	0.67	.	pink	fr	.	4
29	880310	4	e	935	955	20	0.67	.	chum	fr	.	9
29	880310	4	e	935	955	20	0.67	.	coho	fr	.	1
29	880310	4	e	935	955	20	0.67	.	stic	.	.	3
29	880310	5	d	1007	1031	24	0.62	.	chin	fr	.	3
29	880310	5	d	1007	1031	24	0.62	.	chum	fr	.	8
29	880310	5	d	1007	1031	24	0.62	.	lfsm	.	.	2
29	880310	5	d	1007	1031	24	0.62	.	pink	fr	.	6
29	880310	5	d	1007	1031	24	0.62	.	stic	.	.	4
29	880310	5	d	1007	1031	24	0.62	.	surf	.	.	2
30	880314	1	e	1235	1300	25	0.39	.	chum	fr	.	22
30	880314	1	e	1235	1300	25	0.39	.	lfsm	.	.	1
30	880314	1	e	1235	1300	25	0.39	.	pink	fr	.	27
30	880314	1	e	1235	1300	25	0.39	.	surf	.	.	1
30	880314	2	d	1313	1338	25	0.36	.	chum	fr	.	9
30	880314	2	d	1313	1338	25	0.36	.	lfsm	.	.	7
30	880314	2	d	1313	1338	25	0.36	.	pink	fr	.	14
30	880314	3	c	1347	1412	25	0.44	.	chin	fr	.	1
30	880314	3	c	1347	1412	25	0.44	.	chum	fr	.	10
30	880314	3	c	1347	1412	25	0.44	.	pink	fr	.	12
30	880314	3	c	1347	1412	25	0.44	.	stic	.	.	1
30	880314	4	b	1420	1445	25	0.44	.	chum	fr	.	7
30	880314	4	b	1420	1445	25	0.44	.	lfsm	.	.	2
30	880314	4	b	1420	1445	25	0.44	.	pink	fr	.	14
30	880314	4	b	1420	1445	25	0.44	.	stic	.	.	1
30	880314	4	b	1420	1445	25	0.44	.	surf	.	.	10
30	880314	5	a	1453	1515	22	0.57	.	chin	fr	.	2

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
30	880314	5	a	1453	1515	22	0.57	.	chum	fr	.	8
30	880314	5	a	1453	1515	22	0.57	.	herr	.	.	1
30	880314	5	a	1453	1515	22	0.57	.	lfsm	.	.	2
30	880314	5	a	1453	1515	22	0.57	.	pink	fr	.	11
30	880314	5	a	1453	1515	22	0.57	.	stic	.	.	1
30	880314	5	a	1453	1515	22	0.57	.	surf	.	.	3
31	880316	1	a	1455	1518	23	0.46	.	chum	fr	.	14
31	880316	1	a	1455	1518	23	0.46	.	lfsm	.	.	1
31	880316	1	a	1455	1518	23	0.46	.	pink	fr	.	14
31	880316	1	a	1455	1518	23	0.46	.	surf	.	.	23
31	880316	2	b	1529	1546	17	0.62	.	chum	fr	.	9
31	880316	2	b	1529	1546	17	0.62	.	pink	fr	.	7
31	880316	2	b	1529	1546	17	0.62	.	surf	.	.	23
31	880316	3	c	1558	1618	20	0.57	.	chum	fr	.	34
31	880316	3	c	1558	1618	20	0.57	.	pink	fr	.	35
31	880316	3	c	1558	1618	20	0.57	.	surf	.	.	8
31	880316	4	d	1630	1650	20	0.57	.	chum	fr	.	23
31	880316	4	d	1630	1650	20	0.57	.	pink	fr	.	12
31	880316	4	d	1630	1650	20	0.57	.	stic	.	.	1
31	880316	4	d	1630	1650	20	0.57	.	surf	.	.	1
31	880316	5	e	1701	1720	19	0.62	.	chum	fr	.	24
31	880316	5	e	1701	1720	19	0.62	.	pink	fr	.	31
31	880316	5	e	1701	1720	19	0.62	.	stic	.	.	1
31	880316	5	e	1701	1720	19	0.62	.	surf	.	.	1
32	880318	1	a	430	441	11	0.56	.	chin	fr	.	1
32	880318	1	a	430	441	11	0.56	.	chum	fr	.	5
32	880318	1	a	430	441	11	0.56	.	lfsm	.	.	7
32	880318	1	a	430	441	11	0.56	.	pink	fr	.	6
32	880318	1	a	430	441	11	0.56	.	star	.	.	2
32	880318	1	a	430	441	11	0.56	.	stic	.	.	3
32	880318	2	b	507	520	13	0.67	.	chin	fr	.	1
32	880318	2	b	507	520	13	0.67	.	chum	fr	.	4
32	880318	2	b	507	520	13	0.67	.	lfsm	.	.	3
32	880318	2	b	507	520	13	0.67	.	pink	fr	.	7
32	880318	2	b	507	520	13	0.67	.	stic	.	.	3
32	880318	3	c	730	741	11	0.62	.	chum	fr	.	25
32	880318	3	c	730	741	11	0.62	.	lfsm	.	.	3
32	880318	3	c	730	741	11	0.62	.	pink	fr	.	13
32	880318	3	c	730	741	11	0.62	.	stic	.	.	2
32	880318	4	d	810	832	22	0.56	.	chum	fr	.	24
32	880318	4	d	810	832	22	0.56	.	lfsm	.	.	4
32	880318	4	d	810	832	22	0.56	.	pink	fr	.	14
32	880318	4	d	810	832	22	0.56	.	stic	.	.	3
32	880318	5	e	844	904	20	0.51	.	chin	fr	.	3
32	880318	5	e	844	904	20	0.51	.	chum	fr	.	58
32	880318	5	e	844	904	20	0.51	.	coho	fr	.	2

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
32	880318	5	e	844	904	20	0.51	.	lfsm	.	.	13
32	880318	5	e	844	904	20	0.51	.	pink	fr	.	30
32	880318	5	e	844	904	20	0.51	.	stic	.	.	6
33	880321	1	a	1032	1105	33	.	.	chin	fr	.	2
33	880321	1	a	1032	1105	33	.	.	chum	fr	.	34
33	880321	1	a	1032	1105	33	.	.	coho	fr	.	1
33	880321	1	a	1032	1105	33	.	.	lfsm	.	.	64
33	880321	1	a	1032	1105	33	.	.	pink	fr	.	16
33	880321	1	a	1032	1105	33	.	.	stic	.	.	3
33	880321	1	a	1032	1105	33	.	.	surf	.	.	26
33	880321	2	b	1125	1137	12	.	.	chum	fr	.	14
33	880321	2	b	1125	1137	12	.	.	lfsm	.	.	2
33	880321	2	b	1125	1137	12	.	.	pink	fr	.	11
33	880321	2	b	1125	1137	12	.	.	surf	.	.	1
33	880321	3	c	1155	1212	17	.	.	chin	fr	.	1
33	880321	3	c	1155	1212	17	.	.	chum	fr	.	272
33	880321	3	c	1155	1212	17	.	.	lfsm	.	.	27
33	880321	3	c	1155	1212	17	.	.	pink	fr	.	668
33	880321	3	c	1155	1212	17	.	.	stic	.	.	3
34	880324	1	a	445	510	25	0.39	.	chin	fr	.	2
34	880324	1	a	445	510	25	0.39	.	chum	fr	.	60
34	880324	1	a	445	510	25	0.39	.	lfsm	.	.	2
34	880324	1	a	445	510	25	0.39	.	pink	fr	.	32
34	880324	1	a	445	510	25	0.39	.	scul	.	.	2
34	880324	1	a	445	510	25	0.39	.	smel	.	.	17
34	880324	1	a	445	510	25	0.39	.	star	.	.	1
34	880324	1	a	445	510	25	0.39	.	stic	.	.	2
34	880324	1	a	445	510	25	0.39	.	surf	.	.	10
34	880324	2	b	523	550	27	0.39	.	chin	fr	.	2
34	880324	2	b	523	550	27	0.39	.	chum	fr	.	46
34	880324	2	b	523	550	27	0.39	.	lfsm	.	.	2
34	880324	2	b	523	550	27	0.39	.	pink	fr	.	48
34	880324	2	b	523	550	27	0.39	.	smel	.	.	3
34	880324	2	b	523	550	27	0.39	.	stic	.	.	2
34	880324	2	b	523	550	27	0.39	.	surf	.	.	9
34	880324	3	c	605	630	25	0.41	.	chin	fr	.	5
34	880324	3	c	605	630	25	0.41	.	chum	fr	.	50
34	880324	3	c	605	630	25	0.41	.	pink	fr	.	45
34	880324	3	c	605	630	25	0.41	.	smel	.	.	3
34	880324	3	c	605	630	25	0.41	.	surf	.	.	10
34	880324	4	d	645	710	25	0.39	.	chin	fr	.	6
34	880324	4	d	645	710	25	0.39	.	chum	fr	.	50
34	880324	4	d	645	710	25	0.39	.	pink	fr	.	81
34	880324	4	d	645	710	25	0.39	.	smel	.	.	10
34	880324	4	d	645	710	25	0.39	.	surf	.	.	10
34	880324	5	e	725	750	25	0.49	.	chin	fr	.	4

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
34	880324	5	e	725	750	25	0.49	.	chum	fr	.	37
34	880324	5	e	725	750	25	0.49	.	pink	fr	.	18
34	880324	5	e	725	750	25	0.49	.	smel	.	.	3
35	880325	1	a	537	602	25	0.72	.	chin	fr	.	1
35	880325	1	a	537	602	25	0.72	.	chum	fr	.	8
35	880325	1	a	537	602	25	0.72	.	pink	fr	.	11
35	880325	1	a	537	602	25	0.72	.	smel	.	.	4
35	880325	1	a	537	602	25	0.72	.	stic	.	.	2
35	880325	1	a	537	602	25	0.72	.	surf	.	.	7
35	880325	2	b	615	640	25	0.39	.	chin	fr	.	10
35	880325	2	b	615	640	25	0.39	.	chum	fr	.	168
35	880325	2	b	615	640	25	0.39	.	pink	fr	.	102
35	880325	2	b	615	640	25	0.39	.	smel	.	.	14
35	880325	2	b	615	640	25	0.39	.	stic	.	.	2
35	880325	2	b	615	640	25	0.39	.	surf	.	.	17
35	880325	3	c	655	710	15	0.36	.	chin	fr	.	5
35	880325	3	c	655	710	15	0.36	.	chum	fr	.	34
35	880325	3	c	655	710	15	0.36	.	pink	fr	.	29
35	880325	3	c	655	710	15	0.36	.	smel	.	.	1
35	880325	3	c	655	710	15	0.36	.	stic	.	.	4
35	880325	3	c	655	710	15	0.36	.	surf	.	.	11
35	880325	4	d	730	745	15	0.31	.	chin	fr	.	9
35	880325	4	d	730	745	15	0.31	.	chum	fr	.	25
35	880325	4	d	730	745	15	0.31	.	pink	fr	.	21
35	880325	4	d	730	745	15	0.31	.	smel	.	.	1
35	880325	4	d	730	745	15	0.31	.	surf	.	.	1
35	880325	5	e	755	810	15	0.36	.	chin	fr	.	11
35	880325	5	e	755	810	15	0.36	.	chum	fr	.	30
35	880325	5	e	755	810	15	0.36	.	pink	fr	.	29
35	880325	5	e	755	810	15	0.36	.	surf	.	.	2
36	880329	1	a	1356	1420	24	0.46	.	chin	fr	.	4
36	880329	1	a	1356	1420	24	0.46	.	chum	fr	.	21
36	880329	1	a	1356	1420	24	0.46	.	pink	fr	.	14
36	880329	1	a	1356	1420	24	0.46	.	sock	sm	.	1
36	880329	1	a	1356	1420	24	0.46	.	surf	.	.	2
36	880329	2	b	1435	1500	25	0.51	.	chin	fr	.	5
36	880329	2	b	1435	1500	25	0.51	.	chum	fr	.	26
36	880329	2	b	1435	1500	25	0.51	.	lfsm	.	.	3
36	880329	2	b	1435	1500	25	0.51	.	pink	fr	.	12
36	880329	2	b	1435	1500	25	0.51	.	stic	.	.	1
36	880329	3	d	1515	1540	25	0.46	.	chin	fr	.	23
36	880329	3	d	1515	1540	25	0.46	.	chum	fr	.	45
36	880329	3	d	1515	1540	25	0.46	.	pink	fr	.	5
36	880329	3	d	1515	1540	25	0.46	.	surf	.	.	7
36	880329	4	c	1550	1615	25	0.56	.	chin	fr	.	8
36	880329	4	c	1550	1615	25	0.56	.	chum	fr	.	61

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
36	880329	4	c	1550	1615	25	0.56	.	pink	fr	.	51
36	880329	4	c	1550	1615	25	0.56	.	stic	.	.	2
36	880329	5	e	1628	1655	27	0.46	.	chin	fr	.	16
36	880329	5	e	1628	1655	27	0.46	.	chum	fr	.	52
36	880329	5	e	1628	1655	27	0.46	.	pink	fr	.	74
37	880330	1	a	1410	1435	25	0.46	.	chin	fr	.	10
37	880330	1	a	1410	1435	25	0.46	.	chum	fr	.	17
37	880330	1	a	1410	1435	25	0.46	.	pink	fr	.	18
37	880330	1	a	1410	1435	25	0.46	.	stic	.	.	1
37	880330	1	a	1410	1435	25	0.46	.	surf	.	.	4
37	880330	2	b	1447	1510	23	0.51	.	chin	fr	.	4
37	880330	2	b	1447	1510	23	0.51	.	chum	fr	.	24
37	880330	2	b	1447	1510	23	0.51	.	lfsm	.	.	1
37	880330	2	b	1447	1510	23	0.51	.	pink	fr	.	14
37	880330	2	b	1447	1510	23	0.51	.	stic	.	.	1
37	880330	2	b	1447	1510	23	0.51	.	surf	.	.	4
37	880330	3	c	1525	1550	25	0.56	.	chin	fr	.	3
37	880330	3	c	1525	1550	25	0.56	.	chum	fr	.	45
37	880330	3	c	1525	1550	25	0.56	.	pink	fr	.	18
37	880330	3	c	1525	1550	25	0.56	.	stic	.	.	2
37	880330	3	c	1525	1550	25	0.56	.	surf	.	.	7
37	880330	4	d	1603	1625	22	0.56	.	chin	fr	.	9
37	880330	4	d	1603	1625	22	0.56	.	chum	fr	.	70
37	880330	4	d	1603	1625	22	0.56	.	pink	fr	.	14
37	880330	4	d	1603	1625	22	0.56	.	stic	.	.	2
37	880330	4	d	1603	1625	22	0.56	.	surf	.	.	3
37	880330	5	e	1637	1700	23	0.62	.	chin	fr	.	7
37	880330	5	e	1637	1700	23	0.62	.	chum	fr	.	52
37	880330	5	e	1637	1700	23	0.62	.	pink	fr	.	25
37	880330	5	e	1637	1700	23	0.62	.	stic	.	.	2
37	880330	5	e	1637	1700	23	0.62	.	surf	.	.	12
38	880406	1	a	457	522	25	0.46	.	chin	fr	.	1
38	880406	1	a	457	522	25	0.46	.	chum	fr	.	19
38	880406	1	a	457	522	25	0.46	.	lamp	.	.	1
38	880406	1	a	457	522	25	0.46	.	lfsm	.	.	4
38	880406	1	a	457	522	25	0.46	.	pink	fr	.	14
38	880406	2	b	535	600	25	0.56	.	chin	fr	.	6
38	880406	2	b	535	600	25	0.56	.	chum	fr	.	54
38	880406	2	b	535	600	25	0.56	.	pink	fr	.	68
38	880406	2	b	535	600	25	0.56	.	stic	.	.	2
38	880406	2	b	535	600	25	0.56	.	surf	.	.	3
38	880406	3	c	610	635	25	0.51	.	chin	fr	.	10
38	880406	3	c	610	635	25	0.51	.	chum	fr	.	94
38	880406	3	c	610	635	25	0.51	.	pink	fr	.	162
38	880406	3	c	610	635	25	0.51	.	sock	sm	.	1
38	880406	3	c	610	635	25	0.51	.	surf	.	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
38	880406	4	d	650	715	25	0.51	.	chin	fr	.	13
38	880406	4	d	650	715	25	0.51	.	chum	fr	.	18
38	880406	4	d	650	715	25	0.51	.	pink	fr	.	28
38	880406	4	d	650	715	25	0.51	.	stic	.	.	3
38	880406	5	e	725	745	20	0.67	.	chin	fr	.	35
38	880406	5	e	725	745	20	0.67	.	chum	fr	.	43
38	880406	5	e	725	745	20	0.67	.	lfsm	.	.	1
38	880406	5	e	725	745	20	0.67	.	pink	fr	.	54
38	880406	5	e	725	745	20	0.67	.	stic	.	.	1
38	880406	5	e	725	745	20	0.67	.	surf	.	.	1
39	880413	1	a	1437	1447	10	0.78	.	chin	fr	.	7
39	880413	1	a	1437	1447	10	0.78	.	chum	fr	.	4
39	880413	1	a	1437	1447	10	0.78	.	lfsm	.	.	2
39	880413	1	a	1437	1447	10	0.78	.	pink	fr	.	4
39	880413	1	a	1437	1447	10	0.78	.	stic	.	.	2
39	880413	1	a	1437	1447	10	0.78	.	surf	.	.	3
39	880413	2	b	1459	1519	20	0.73	.	chin	fr	.	7
39	880413	2	b	1459	1519	20	0.73	.	chum	fr	.	33
39	880413	2	b	1459	1519	20	0.73	.	coho	fr	.	1
39	880413	2	b	1459	1519	20	0.73	.	pink	fr	.	21
39	880413	2	b	1459	1519	20	0.73	.	stic	.	.	20
39	880413	2	b	1459	1519	20	0.73	.	surf	.	.	2
39	880413	3	c	1535	1545	10	1.00	.	chin	fr	.	2
39	880413	3	c	1535	1545	10	1.00	.	chin	sm	.	1
39	880413	3	c	1535	1545	10	1.00	.	chum	fr	.	24
39	880413	3	c	1535	1545	10	1.00	.	pink	fr	.	63
39	880413	3	c	1535	1545	10	1.00	.	stic	.	.	5
39	880413	3	c	1535	1545	10	1.00	.	surf	.	.	5
39	880413	4	d	1602	1612	10	1.00	.	chin	fr	.	1
39	880413	4	d	1602	1612	10	1.00	.	chin	sm	.	2
39	880413	4	d	1602	1612	10	1.00	.	chum	fr	.	116
39	880413	4	d	1602	1612	10	1.00	.	lfsm	.	.	1
39	880413	4	d	1602	1612	10	1.00	.	pink	fr	.	252
39	880413	4	d	1602	1612	10	1.00	.	stic	.	.	6
39	880413	4	d	1602	1612	10	1.00	.	surf	.	.	7
39	880413	5	e	1624	1637	13	0.95	.	chin	fr	.	16
39	880413	5	e	1624	1637	13	0.95	.	chin	sm	.	4
39	880413	5	e	1624	1637	13	0.95	.	chum	fr	.	233
39	880413	5	e	1624	1637	13	0.95	.	pink	fr	.	245
39	880413	5	e	1624	1637	13	0.95	.	smel	.	.	72
39	880413	5	e	1624	1637	13	0.95	.	stic	.	.	6
39	880413	5	e	1624	1637	13	0.95	.	surf	.	.	12
40	880414	1	a	545	555	10	0.95	.	chin	fr	.	5
40	880414	1	a	545	555	10	0.95	.	chin	sm	.	1
40	880414	1	a	545	555	10	0.95	.	chum	fr	.	21
40	880414	1	a	545	555	10	0.95	.	pink	fr	.	25

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
40	880414	1	a	545	555	10	0.95	.	stic	ad	.	3
40	880414	1	a	545	555	10	0.95	.	surf	.	.	6
40	880414	2	e	608	618	10	1.00	.	chin	fr	.	13
40	880414	2	e	608	618	10	1.00	.	chum	fr	.	171
40	880414	2	e	608	618	10	1.00	.	pink	fr	.	139
40	880414	2	e	608	618	10	1.00	.	stic	ad	.	17
40	880414	2	e	608	618	10	1.00	.	surf	.	.	5
40	880414	3	d	634	646	12	0.97	.	chin	fr	.	8
40	880414	3	d	634	646	12	0.97	.	chin	sm	.	3
40	880414	3	d	634	646	12	0.97	.	chum	fr	.	96
40	880414	3	d	634	646	12	0.97	.	coho	.	.	1
40	880414	3	d	634	646	12	0.97	.	pink	fr	.	72
40	880414	3	d	634	646	12	0.97	.	sock	sm	.	2
40	880414	3	d	634	646	12	0.97	.	stic	ad	.	12
40	880414	3	d	634	646	12	0.97	.	surf	.	.	9
40	880414	4	c	724	734	10	1.00	.	chin	fr	.	5
40	880414	4	c	724	734	10	1.00	.	chin	sm	.	2
40	880414	4	c	724	734	10	1.00	.	chum	fr	.	76
40	880414	4	c	724	734	10	1.00	.	coho	.	.	1
40	880414	4	c	724	734	10	1.00	.	pink	fr	.	73
40	880414	4	c	724	734	10	1.00	.	stic	ad	.	4
40	880414	4	c	724	734	10	1.00	.	surf	.	.	11
40	880414	5	b	750	800	10	0.95	.	chin	fr	.	8
40	880414	5	b	750	800	10	0.95	.	chin	sm	.	4
40	880414	5	b	750	800	10	0.95	.	chum	fr	.	207
40	880414	5	b	750	800	10	0.95	.	pink	fr	.	49
40	880414	5	b	750	800	10	0.95	.	stic	ad	.	1
40	880414	5	b	750	800	10	0.95	.	surf	.	.	106
41	880418	1	a	2235	2245	10	0.95	.	chin	fr	.	2
41	880418	1	a	2235	2245	10	0.95	.	chum	fr	.	5
41	880418	1	a	2235	2245	10	0.95	.	lfsm	.	.	1
41	880418	1	a	2235	2245	10	0.95	.	ooli	.	.	21
41	880418	1	a	2235	2245	10	0.95	.	peam	.	.	3
41	880418	1	a	2235	2245	10	0.95	.	pink	fr	.	5
41	880418	1	a	2235	2245	10	0.95	.	stic	ad	.	5
41	880418	2	b	2305	2315	10	0.90	.	chin	fr	.	1
41	880418	2	b	2305	2315	10	0.90	.	chum	fr	.	19
41	880418	2	b	2305	2315	10	0.90	.	lfsm	.	.	1
41	880418	2	b	2305	2315	10	0.90	.	ooli	.	.	4
41	880418	2	b	2305	2315	10	0.90	.	peam	.	.	2
41	880418	2	b	2305	2315	10	0.90	.	pink	fr	.	126
41	880418	3	c	2332	2342	10	0.95	.	chum	fr	.	5
41	880418	3	c	2332	2342	10	0.95	.	ooli	.	.	8
41	880418	3	c	2332	2342	10	0.95	.	peam	.	.	1
41	880418	3	c	2332	2342	10	0.95	.	pink	fr	.	39
41	880418	3	c	2332	2342	10	0.95	.	sock	sm	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
41	880418	3	c	2332	2342	10	0.95	.	stic	ad	.	2
41	880419	4	d	0	10	10	0.95	.	chin	fr	.	1
41	880419	4	d	0	10	10	0.95	.	chin	sm	.	1
41	880419	4	d	0	10	10	0.95	.	chum	fr	.	42
41	880419	4	d	0	10	10	0.95	.	lfsm	.	.	1
41	880419	4	d	0	10	10	0.95	.	ooli	.	.	6
41	880419	4	d	0	10	10	0.95	.	peam	.	.	1
41	880419	4	d	0	10	10	0.95	.	pink	fr	.	348
41	880419	4	d	0	10	10	0.95	.	sock	sm	.	2
41	880419	4	d	0	10	10	0.95	.	stic	ad	.	1
41	880419	5	e	25	35	10	0.95	.	chin	fr	.	7
41	880419	5	e	25	35	10	0.95	.	chum	fr	.	38
41	880419	5	e	25	35	10	0.95	.	lamp	.	.	3
41	880419	5	e	25	35	10	0.95	.	lfsm	.	.	3
41	880419	5	e	25	35	10	0.95	.	ooli	.	.	5
41	880419	5	e	25	35	10	0.95	.	peam	.	.	1
41	880419	5	e	25	35	10	0.95	.	pink	fr	.	373
41	880419	5	e	25	35	10	0.95	.	stic	ad	.	1
42	880420	1	a	700	710	10	0.95	10	chin	fr	.	8
42	880420	1	a	700	710	10	0.95	10	chin	sm	.	1
42	880420	1	a	700	710	10	0.95	10	chum	fr	.	28
42	880420	1	a	700	710	10	0.95	10	ooli	.	.	2
42	880420	1	a	700	710	10	0.95	10	pink	fr	.	44
42	880420	1	a	700	710	10	0.95	10	stic	ad	.	3
42	880420	2	b	730	740	10	0.95	10	chin	fr	.	4
42	880420	2	b	730	740	10	0.95	10	chum	fr	.	57
42	880420	2	b	730	740	10	0.95	10	coho	fr	.	9
42	880420	2	b	730	740	10	0.95	10	ooli	.	.	4
42	880420	2	b	730	740	10	0.95	10	pink	fr	.	103
42	880420	2	b	730	740	10	0.95	10	sock	sm	.	3
42	880420	3	c	755	805	10	1.00	10	chin	fr	.	5
42	880420	3	c	755	805	10	1.00	10	chin	sm	.	1
42	880420	3	c	755	805	10	1.00	10	chum	fr	.	95
42	880420	3	c	755	805	10	1.00	10	ooli	.	.	1
42	880420	3	c	755	805	10	1.00	10	peam	.	.	1
42	880420	3	c	755	805	10	1.00	10	pink	fr	.	295
42	880420	3	c	755	805	10	1.00	10	rain	.	.	1
42	880420	3	c	755	805	10	1.00	10	sock	sm	.	2
42	880420	3	c	755	805	10	1.00	10	stic	ad	.	1
42	880420	4	d	827	837	10	1.00	10	chin	fr	.	14
42	880420	4	d	827	837	10	1.00	10	chin	sm	.	1
42	880420	4	d	827	837	10	1.00	10	chum	fr	.	303
42	880420	4	d	827	837	10	1.00	10	coho	fr	.	1
42	880420	4	d	827	837	10	1.00	10	peam	.	.	2
42	880420	4	d	827	837	10	1.00	10	pink	fr	.	338
42	880420	4	d	827	837	10	1.00	10	rain	sm	.	2

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
42	880420	4	d	827	837	10	1.00	10	sock	sm	.	6
42	880420	4	d	827	837	10	1.00	10	stic	ad	.	2
42	880420	5	e	905	915	10	0.97	10	chin	fr	.	22
42	880420	5	e	905	915	10	0.97	10	chum	fr	.	53
42	880420	5	e	905	915	10	0.97	10	ooli	.	.	4
42	880420	5	e	905	915	10	0.97	10	peam	.	.	2
42	880420	5	e	905	915	10	0.97	10	pink	fr	.	80
42	880420	5	e	905	915	10	0.97	10	sock	sm	.	3
43	880421	1	a	2247	2257	10	1.00	10	chin	fr	.	6
43	880421	1	a	2247	2257	10	1.00	10	chin	sm	.	1
43	880421	1	a	2247	2257	10	1.00	10	chum	fr	.	34
43	880421	1	a	2247	2257	10	1.00	10	lamp	.	.	2
43	880421	1	a	2247	2257	10	1.00	10	lfsm	.	.	1
43	880421	1	a	2247	2257	10	1.00	10	ooli	.	.	434
43	880421	1	a	2247	2257	10	1.00	10	peam	.	.	4
43	880421	1	a	2247	2257	10	1.00	10	pink	fr	.	158
43	880421	1	a	2247	2257	10	1.00	10	sock	sm	.	1
43	880421	1	a	2247	2257	10	1.00	10	stic	ad	.	17
43	880421	2	b	2350	2400	10	0.95	10	chin	fr	.	2
43	880421	2	b	2350	2400	10	0.95	10	chin	sm	.	2
43	880421	2	b	2350	2400	10	0.95	10	chum	fr	.	7
43	880421	2	b	2350	2400	10	0.95	10	lamp	.	.	1
43	880421	2	b	2350	2400	10	0.95	10	lfsm	.	.	1
43	880421	2	b	2350	2400	10	0.95	10	ooli	.	.	1911
43	880421	2	b	2350	2400	10	0.95	10	peam	.	.	3
43	880421	2	b	2350	2400	10	0.95	10	pink	fr	.	9
43	880421	2	b	2350	2400	10	0.95	10	scul	.	.	2
43	880421	2	b	2350	2400	10	0.95	10	star	.	.	1
43	880421	2	b	2350	2400	10	0.95	10	stic	ad	.	9
43	880422	3	e	52	102	10	0.95	10	chin	fr	.	27
43	880422	3	e	52	102	10	0.95	10	chin	sm	.	5
43	880422	3	e	52	102	10	0.95	10	chum	fr	.	98
43	880422	3	e	52	102	10	0.95	10	lamp	.	.	6
43	880422	3	e	52	102	10	0.95	10	lfsm	.	.	1
43	880422	3	e	52	102	10	0.95	10	ooli	.	.	954
43	880422	3	e	52	102	10	0.95	10	peam	.	.	2
43	880422	3	e	52	102	10	0.95	10	pink	fr	.	277
43	880422	3	e	52	102	10	0.95	10	scul	.	.	1
43	880422	3	e	52	102	10	0.95	10	sock	sm	.	9
43	880422	3	e	52	102	10	0.95	10	squa	.	.	1
43	880422	3	e	52	102	10	0.95	10	star	.	.	4
43	880422	3	e	52	102	10	0.95	10	stic	ad	.	15
44	880425	1	c	2300	2310	10	0.95	9	chin	fr	.	2
44	880425	1	c	2300	2310	10	0.95	9	chin	sm	.	1
44	880425	1	c	2300	2310	10	0.95	9	chum	fr	.	24
44	880425	1	c	2300	2310	10	0.95	9	lamp	.	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SUkFT	SPECIES	STAGE	ORIGIN	NUMBER
44	880425	1	c	2300	2310	10	0.95	9	ooli	.	.	33
44	880425	1	c	2300	2310	10	0.95	9	pink	fr	.	82
44	880425	1	c	2300	2310	10	0.95	9	sock	sm	.	18
44	880425	2	a	2330	2340	10	1.00	9	chum	fr	.	8
44	880425	2	a	2330	2340	10	1.00	9	ooli	.	.	170
44	880425	2	a	2330	2340	10	1.00	9	peam	.	.	1
44	880425	2	a	2330	2340	10	1.00	9	pink	fr	.	9
44	880425	2	a	2330	2340	10	1.00	9	sock	sm	.	2
44	880425	2	a	2330	2340	10	1.00	9	stic	ad	.	1
44	880426	3	b	8	18	10	0.95	9	chin	fr	.	3
44	880426	3	b	8	18	10	0.95	9	chin	sm	.	2
44	880426	3	b	8	18	10	0.95	9	chum	fr	.	5
44	880426	3	b	8	18	10	0.95	9	ooli	.	.	127
44	880426	3	b	8	18	10	0.95	9	pink	fr	.	12
44	880426	3	b	8	18	10	0.95	9	sock	sm	.	6
44	880426	3	b	8	18	10	0.95	9	star	.	.	1
44	880426	3	b	8	18	10	0.95	9	stic	ad	.	5
44	880426	4	d	45	55	10	0.95	9	chin	fr	.	6
44	880426	4	d	45	55	10	0.95	9	chin	sm	.	1
44	880426	4	d	45	55	10	0.95	9	chum	fr	.	32
44	880426	4	d	45	55	10	0.95	9	lamp	.	.	1
44	880426	4	d	45	55	10	0.95	9	ooli	.	.	140
44	880426	4	d	45	55	10	0.95	9	pink	fr	.	74
44	880426	4	d	45	55	10	0.95	9	rain	fr	.	1
44	880426	4	d	45	55	10	0.95	9	rain	sm	.	1
44	880426	4	d	45	55	10	0.95	9	sock	sm	.	70
44	880426	4	d	45	55	10	0.95	9	star	.	.	4
44	880426	4	d	45	55	10	0.95	9	stic	ad	.	1
44	880426	5	e	130	140	10	1.00	9	chin	sm	.	2
44	880426	5	e	130	140	10	1.00	9	chum	fr	.	18
44	880426	5	e	130	140	10	1.00	9	lamp	.	.	2
44	880426	5	e	130	140	10	1.00	9	ooli	.	.	974
44	880426	5	e	130	140	10	1.00	9	pink	fr	.	51
44	880426	5	e	130	140	10	1.00	9	rain	sm	.	2
44	880426	5	e	130	140	10	1.00	9	sock	sm	.	70
44	880426	5	e	130	140	10	1.00	9	stic	ad	.	4
46	880428	1	a	1446	1451	5	1.00	10	chum	fr	.	7
46	880428	1	a	1446	1451	5	1.00	10	ooli	.	.	70
46	880428	1	a	1446	1451	5	1.00	10	pink	fr	.	9
46	880428	1	a	1446	1451	5	1.00	10	sock	sm	.	3
46	880428	2	b	1517	1527	10	0.95	10	chin	sm	.	1
46	880428	2	b	1517	1527	10	0.95	10	chum	fr	.	12
46	880428	2	b	1517	1527	10	0.95	10	coho	fr	.	1
46	880428	2	b	1517	1527	10	0.95	10	ooli	.	.	50
46	880428	2	b	1517	1527	10	0.95	10	pink	fr	.	16
46	880428	2	b	1517	1527	10	0.95	10	sock	sm	.	3

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
46	880428	2	b	1517	1527	10	0.95	10	stic	.	.	1
46	880428	3	c	1545	1555	10	1.00	10	chin	fr	.	3
46	880428	3	c	1545	1555	10	1.00	10	chin	sm	.	3
46	880428	3	c	1545	1555	10	1.00	10	chum	fr	.	36
46	880428	3	c	1545	1555	10	1.00	10	ooli	.	.	23
46	880428	3	c	1545	1555	10	1.00	10	pink	fr	.	22
46	880428	3	c	1545	1555	10	1.00	10	rain	fr	.	1
46	880428	3	c	1545	1555	10	1.00	10	sock	sm	.	38
46	880428	4	d	1616	1626	10	1.00	10	chin	sm	.	2
46	880428	4	d	1616	1626	10	1.00	10	chum	fr	.	10
46	880428	4	d	1616	1626	10	1.00	10	ooli	.	.	51
46	880428	4	d	1616	1626	10	1.00	10	pink	fr	.	12
46	880428	4	d	1616	1626	10	1.00	10	sock	sm	.	21
46	880428	4	d	1616	1626	10	1.00	10	surf	.	.	1
46	880428	5	e	1645	1655	10	1.00	10	chin	sm	.	4
46	880428	5	e	1645	1655	10	1.00	10	chum	fr	.	7
46	880428	5	e	1645	1655	10	1.00	10	lamp	.	.	2
46	880428	5	e	1645	1655	10	1.00	10	ooli	.	.	323
46	880428	5	e	1645	1655	10	1.00	10	pink	fr	.	7
46	880428	5	e	1645	1655	10	1.00	10	sock	sm	.	5
46	880428	5	e	1645	1655	10	1.00	10	stic	.	.	2
47	880505	1	c	2019	2029	10	0.98	9	chin	fr	.	2
47	880505	1	c	2019	2029	10	0.98	9	chin	sm	.	1
47	880505	1	c	2019	2029	10	0.98	9	chum	fr	.	1
47	880505	1	c	2019	2029	10	0.98	9	ooli	.	.	202
47	880505	1	c	2019	2029	10	0.98	9	peam	.	.	2
47	880505	1	c	2019	2029	10	0.98	9	pink	fr	.	3
47	880505	1	c	2019	2029	10	0.98	9	sock	sm	.	53
47	880505	2	b	1912	1922	10	1.00	9	chin	fr	.	3
47	880505	2	b	1912	1922	10	1.00	9	chin	sm	.	5
47	880505	2	b	1912	1922	10	1.00	9	chum	fr	.	5
47	880505	2	b	1912	1922	10	1.00	9	lamp	.	.	2
47	880505	2	b	1912	1922	10	1.00	9	lfsm	.	.	1
47	880505	2	b	1912	1922	10	1.00	9	ooli	.	.	301
47	880505	2	b	1912	1922	10	1.00	9	peam	.	.	3
47	880505	2	b	1912	1922	10	1.00	9	pink	fr	.	4
47	880505	2	b	1912	1922	10	1.00	9	sock	sm	.	14
47	880505	2	b	1912	1922	10	1.00	9	stic	.	.	8
47	880505	3	a	2202	2210	8	1.10	9	chin	sm	.	6
47	880505	3	a	2202	2210	8	1.10	9	chum	fr	.	4
47	880505	3	a	2202	2210	8	1.10	9	ooli	.	.	149
47	880505	3	a	2202	2210	8	1.10	9	peam	.	.	4
47	880505	3	a	2202	2210	8	1.10	9	sock	sm	.	1
47	880505	3	a	2202	2210	8	1.10	9	stic	.	.	3
47	880505	4	e	2248	2258	10	1.03	9	chin	fr	.	1
47	880505	4	e	2248	2258	10	1.03	9	chum	fr	.	30

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47	880505	4	e	2248	2258	10	1.03	9	lamp	.	.	2
47	880505	4	e	2248	2258	10	1.03	9	ooli	.	.	364
47	880505	4	e	2248	2258	10	1.03	9	peam	.	.	1
47	880505	4	e	2248	2258	10	1.03	9	pink	fr	.	9
47	880505	4	e	2248	2258	10	1.03	9	sock	sm	.	516
47	880505	4	e	2248	2258	10	1.03	9	stic	.	.	1
47	880506	5	d	16	21	5	0.95	9	chin	fr	.	4
47	880506	5	d	16	21	5	0.95	9	chin	sm	.	6
47	880506	5	d	16	21	5	0.95	9	chum	fr	.	42
47	880506	5	d	16	21	5	0.95	9	lamp	.	.	3
47	880506	5	d	16	21	5	0.95	9	ooli	.	.	261
47	880506	5	d	16	21	5	0.95	9	pink	fr	.	5
47	880506	5	d	16	21	5	0.95	9	sock	sm	.	292
47	880506	5	d	16	21	5	0.95	9	stic	.	.	1
48	880509	1	a	2256	2306	10	1.10	.	chin	fr	.	2
48	880509	1	a	2256	2306	10	1.10	.	chin	sm	.	1
48	880509	1	a	2256	2306	10	1.10	.	chum	fr	.	5
48	880509	1	a	2256	2306	10	1.10	.	ooli	.	.	5
48	880509	1	a	2256	2306	10	1.10	.	peam	.	.	1
48	880509	1	a	2256	2306	10	1.10	.	stur	.	.	2
48	880509	1	a	2256	2306	10	1.10	.	surf	.	.	1
48	880509	2	b	2336	2346	10	0.95	.	chin	fr	.	1
48	880509	2	b	2336	2346	10	0.95	.	chin	sm	.	5
48	880509	2	b	2336	2346	10	0.95	.	chum	fr	.	27
48	880509	2	b	2336	2346	10	0.95	.	ooli	.	.	1
48	880509	2	b	2336	2346	10	0.95	.	pink	fr	.	3
48	880509	2	b	2336	2346	10	0.95	.	sock	sm	.	173
48	880510	3	b	15	23	8	0.80	.	chin	fr	.	3
48	880510	3	b	15	23	8	0.80	.	chin	sm	.	7
48	880510	3	b	15	23	8	0.80	.	chum	fr	.	16
48	880510	3	b	15	23	8	0.80	.	ooli	.	.	4
48	880510	3	b	15	23	8	0.80	.	peam	.	.	1
48	880510	3	b	15	23	8	0.80	.	pink	fr	.	7
48	880510	3	b	15	23	8	0.80	.	sock	sm	.	97
48	880510	3	b	15	23	8	0.80	.	squa	.	.	1
48	880510	3	b	15	23	8	0.80	.	stic	.	.	4
48	880510	4	c	58	108	10	0.85	.	chin	fr	.	12
48	880510	4	c	58	108	10	0.85	.	chin	sm	.	9
48	880510	4	c	58	108	10	0.85	.	chum	fr	.	78
48	880510	4	c	58	108	10	0.85	.	ooli	.	.	7
48	880510	4	c	58	108	10	0.85	.	pink	fr	.	11
48	880510	4	c	58	108	10	0.85	.	rain	sm	.	1
48	880510	4	c	58	108	10	0.85	.	sock	sm	.	360
48	880510	5	d	303	309	6	1.00	.	chin	fr	.	4
48	880510	5	d	303	309	6	1.00	.	chin	sm	.	14
48	880510	5	d	303	309	6	1.00	.	chum	fr	.	73

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
48	880510	5	d	303	309	6	1.0	.	lamp	.	.	1
48	880510	5	d	303	309	6	1.0	.	ooli	.	.	9
48	880510	5	d	303	309	6	1.0	.	peam	.	.	2
48	880510	5	d	303	309	6	1.0	.	pink	fr	.	22
48	880510	5	d	303	309	6	1.0	.	sock	sm	.	560
48	880510	5	d	303	309	6	1.0	.	stic	.	.	3
49	880510	1	c	2348	2358	10	1.0	11	chin	fr	.	2
49	880510	1	c	2348	2358	10	1.0	11	chin	sm	.	6
49	880510	1	c	2348	2358	10	1.0	11	chum	fr	.	33
49	880510	1	c	2348	2358	10	1.0	11	coho	sm	h	1
49	880510	1	c	2348	2358	10	1.0	11	coho	sm	.	1
49	880510	1	c	2348	2358	10	1.0	11	lamp	.	.	5
49	880510	1	c	2348	2358	10	1.0	11	ooli	.	.	1
49	880510	1	c	2348	2358	10	1.0	11	pink	fr	.	10
49	880510	1	c	2348	2358	10	1.0	11	sock	sm	.	258
49	880510	1	c	2348	2358	10	1.0	11	stic	.	.	1
49	880510	1	c	2348	2358	10	1.0	11	surf	.	.	1
49	880511	2	e	36	46	10	1.0	11	chin	fr	.	5
49	880511	2	e	36	46	10	1.0	11	chin	sm	.	6
49	880511	2	e	36	46	10	1.0	11	chin	sm	h	1
49	880511	2	e	36	46	10	1.0	11	chum	fr	.	82
49	880511	2	e	36	46	10	1.0	11	coho	sm	.	4
49	880511	2	e	36	46	10	1.0	11	lamp	.	.	2
49	880511	2	e	36	46	10	1.0	11	ooli	.	.	3
49	880511	2	e	36	46	10	1.0	11	peam	.	.	3
49	880511	2	e	36	46	10	1.0	11	pink	fr	.	24
49	880511	2	e	36	46	10	1.0	11	sock	sm	.	281
49	880511	2	e	36	46	10	1.0	11	stic	ad	.	1
49	880511	3	d	142	149	7	1.1	11	chin	sm	.	1
49	880511	3	d	142	149	7	1.1	11	chum	fr	.	10
49	880511	3	d	142	149	7	1.1	11	ooli	.	.	2
49	880511	3	d	142	149	7	1.1	11	pink	fr	.	2
49	880511	3	d	142	149	7	1.1	11	sock	sm	.	23
49	880511	3	d	142	149	7	1.1	11	stic	ad	.	1
49	880511	4	b	223	233	10	1.0	11	chin	fr	.	1
49	880511	4	b	223	233	10	1.0	11	chin	sm	.	4
49	880511	4	b	223	233	10	1.0	11	chum	fr	.	2
49	880511	4	b	223	233	10	1.0	11	ooli	.	.	2
49	880511	4	b	223	233	10	1.0	11	pink	fr	.	1
49	880511	4	b	223	233	10	1.0	11	sock	sm	.	8
49	880511	5	a	259	309	10	1.0	11	chin	sm	.	2
49	880511	5	a	259	309	10	1.0	11	chum	fr	.	7
49	880511	5	a	259	309	10	1.0	11	coho	sm	.	1
49	880511	5	a	259	309	10	1.0	11	lamp	.	.	1
49	880511	5	a	259	309	10	1.0	11	ooli	.	.	15
49	880511	5	a	259	309	10	1.0	11	pink	fr	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
49	880511	5	a	259	309	10	1.00	11	scul	.	.	1
49	880511	5	a	259	309	10	1.00	11	sock	sm	.	8
49	880511	5	a	259	309	10	1.00	11	stic	ad	.	2
50	880513	1	c	148	158	10	0.97	11	chin	fr	.	3
50	880513	1	c	148	158	10	0.97	11	chin	sm	.	4
50	880513	1	c	148	158	10	0.97	11	chum	fr	.	59
50	880513	1	c	148	158	10	0.97	11	coho	sm	.	1
50	880513	1	c	148	158	10	0.97	11	lamp	.	.	2
50	880513	1	c	148	158	10	0.97	11	peam	.	.	1
50	880513	1	c	148	158	10	0.97	11	pink	fr	.	5
50	880513	1	c	148	158	10	0.97	11	sock	sm	.	309
50	880513	1	c	148	158	10	0.97	11	stic	ad	.	1
50	880513	2	d	250	300	10	0.95	11	chin	fr	.	2
50	880513	2	d	250	300	10	0.95	11	chin	sm	.	9
50	880513	2	d	250	300	10	0.95	11	chum	fr	.	51
50	880513	2	d	250	300	10	0.95	11	lamp	.	.	1
50	880513	2	d	250	300	10	0.95	11	ooli	.	.	3
50	880513	2	d	250	300	10	0.95	11	pink	fr	.	8
50	880513	2	d	250	300	10	0.95	11	sock	fr	.	1
50	880513	2	d	250	300	10	0.95	11	sock	sm	.	826
50	880513	2	d	250	300	10	0.95	11	stic	ad	.	1
50	880513	3	b	353	403	10	1.00	11	chin	fr	.	1
50	880513	3	b	353	403	10	1.00	11	chin	sm	.	6
50	880513	3	b	353	403	10	1.00	11	chum	fr	.	22
50	880513	3	b	353	403	10	1.00	11	coho	fr	.	2
50	880513	3	b	353	403	10	1.00	11	ooli	.	.	1
50	880513	3	b	353	403	10	1.00	11	pink	fr	.	1
50	880513	3	b	353	403	10	1.00	11	sock	sm	.	181
50	880513	3	b	353	403	10	1.00	11	stic	ad	.	1
50	880513	4	e	507	512	5	1.00	11	chin	fr	.	4
50	880513	4	e	507	512	5	1.00	11	chin	sm	.	10
50	880513	4	e	507	512	5	1.00	11	chum	fr	.	5
50	880513	4	e	507	512	5	1.00	11	coho	fr	.	2
50	880513	4	e	507	512	5	1.00	11	peam	.	.	1
50	880513	4	e	507	512	5	1.00	11	pink	fr	.	1
50	880513	4	e	507	512	5	1.00	11	sock	sm	.	3
50	880513	5	a	537	547	10	0.95	11	chin	fr	.	12
50	880513	5	a	537	547	10	0.95	11	chin	sm	.	11
50	880513	5	a	537	547	10	0.95	11	chum	fr	.	22
50	880513	5	a	537	547	10	0.95	11	rain	sm	.	2
50	880513	5	a	537	547	10	0.95	11	sock	sm	.	459
51	880516	1	a	1846	1856	10	.	10	chin	fr	.	1
51	880516	1	a	1846	1856	10	.	10	chin	sm	.	7
51	880516	1	a	1846	1856	10	.	10	chin	sm	h	1
51	880516	1	a	1846	1856	10	.	10	chum	fr	.	9
51	880516	1	a	1846	1856	10	.	10	coho	fr	.	2

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
51	880516	1	a	1846	1856	10	.	10	coho	sm	.	1
51	880516	1	a	1846	1856	10	.	10	peam	.	.	1
51	880516	1	a	1846	1856	10	.	10	pink	fr	.	2
51	880516	1	a	1846	1856	10	.	10	sock	sm	.	201
51	880516	2	b	1925	1935	10	.	10	chin	fr	.	3
51	880516	2	b	1925	1935	10	.	10	chin	sm	.	1
51	880516	2	b	1925	1935	10	.	10	chum	fr	.	26
51	880516	2	b	1925	1935	10	.	10	coho	sm	.	5
51	880516	2	b	1925	1935	10	.	10	lamp	.	.	3
51	880516	2	b	1925	1935	10	.	10	sock	sm	.	382
51	880516	2	b	1925	1935	10	.	10	star	.	.	1
51	880516	3	c	2104	2114	10	.	10	chin	sm	.	1
51	880516	3	c	2104	2114	10	.	10	chin	sm	h	1
51	880516	3	c	2104	2114	10	.	10	chum	fr	.	16
51	880516	3	c	2104	2114	10	.	10	lamp	.	.	6
51	880516	3	c	2104	2114	10	.	10	ooli	.	.	1
51	880516	3	c	2104	2114	10	.	10	pink	fr	.	4
51	880516	3	c	2104	2114	10	.	10	sock	sm	.	278
51	880516	4	d	2144	2152	8	.	10	chin	sm	.	4
51	880516	4	d	2144	2152	8	.	10	chum	fr	.	7
51	880516	4	d	2144	2152	8	.	10	lamp	.	.	4
51	880516	4	d	2144	2152	8	.	10	pink	fr	.	3
51	880516	4	d	2144	2152	8	.	10	rain	sm	.	1
51	880516	4	d	2144	2152	8	.	10	sock	sm	.	68
51	880516	4	d	2144	2152	8	.	10	star	.	.	1
51	880516	5	e	2225	2235	10	.	10	chin	fr	.	2
51	880516	5	e	2225	2235	10	.	10	chin	sm	h	1
51	880516	5	e	2225	2235	10	.	10	chum	fr	.	2
51	880516	5	e	2225	2235	10	.	10	coho	sm	.	1
51	880516	5	e	2225	2235	10	.	10	lamp	.	.	4
51	880516	5	e	2225	2235	10	.	10	ooli	.	.	1
51	880516	5	e	2225	2235	10	.	10	peam	.	.	1
51	880516	5	e	2225	2235	10	.	10	pink	fr	.	1
51	880516	5	e	2225	2235	10	.	10	sock	sm	.	10
51	880516	5	e	2225	2235	10	.	10	star	.	.	1
52	880518	1	e	1927	1937	10	1	10	chin	sm	.	2
52	880518	1	e	1927	1937	10	1	10	chum	fr	.	1
52	880518	1	e	1927	1937	10	1	10	pink	fr	.	1
52	880518	1	e	1927	1937	10	1	10	sock	sm	.	1
52	880518	1	e	1927	1937	10	1	10	star	.	.	1
52	880518	2	b	1954	2004	10	1	10	chin	fr	.	1
52	880518	2	b	1954	2004	10	1	10	chin	sm	.	4
52	880518	2	b	1954	2004	10	1	10	chum	fr	.	2
52	880518	2	b	1954	2004	10	1	10	lamp	.	.	4
52	880518	2	b	1954	2004	10	1	10	ooli	.	.	1
52	880518	2	b	1954	2004	10	1	10	sock	sm	.	55

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
52	880518	2	b	1954	2004	10	1.00	10.0	star	.	.	1
52	880518	3	a	2034	2044	10	0.80	10.0	chin	fr	.	1
52	880518	3	a	2034	2044	10	0.80	10.0	chin	sm	.	3
52	880518	3	a	2034	2044	10	0.80	10.0	chum	fr	.	1
52	880518	3	a	2034	2044	10	0.80	10.0	coho	sm	.	1
52	880518	3	a	2034	2044	10	0.80	10.0	pink	fr	.	1
52	880518	3	a	2034	2044	10	0.80	10.0	scul	.	.	1
52	880518	3	a	2034	2044	10	0.80	10.0	sock	sm	.	14
52	880518	3	a	2034	2044	10	0.80	10.0	star	.	.	2
52	880518	4	c	2111	2121	10	1.00	10.0	chin	sm	.	3
52	880518	4	c	2111	2121	10	1.00	10.0	chum	fr	.	5
52	880518	4	c	2111	2121	10	1.00	10.0	coho	sm	.	1
52	880518	4	c	2111	2121	10	1.00	10.0	coho	sm	h	1
52	880518	4	c	2111	2121	10	1.00	10.0	cutt	.	.	2
52	880518	4	c	2111	2121	10	1.00	10.0	sock	sm	.	161
52	880518	4	c	2111	2121	10	1.00	10.0	star	.	.	1
52	880518	5	d	2156	2206	10	1.00	10.0	chin	fr	.	1
52	880518	5	d	2156	2206	10	1.00	10.0	lamp	.	.	1
52	880518	5	d	2156	2206	10	1.00	10.0	pink	fr	.	1
52	880518	5	d	2156	2206	10	1.00	10.0	sock	sm	.	1
52	880518	5	d	2156	2206	10	1.00	10.0	star	.	.	1
53	880519	1	a	1854	1904	10	0.85	9.5	chin	sm	.	8
53	880519	1	a	1854	1904	10	0.85	9.5	chum	fr	.	5
53	880519	1	a	1854	1904	10	0.85	9.5	coho	sm	.	5
53	880519	1	a	1854	1904	10	0.85	9.5	lamp	.	.	3
53	880519	1	a	1854	1904	10	0.85	9.5	peam	.	.	1
53	880519	1	a	1854	1904	10	0.85	9.5	sock	sm	.	54
53	880519	1	a	1854	1904	10	0.85	9.5	star	.	.	1
53	880519	2	b	1929	1939	10	0.90	9.5	chin	sm	h	1
53	880519	2	b	1929	1939	10	0.90	9.5	chum	fr	.	4
53	880519	2	b	1929	1939	10	0.90	9.5	coho	sm	h	1
53	880519	2	b	1929	1939	10	0.90	9.5	lamp	.	.	1
53	880519	2	b	1929	1939	10	0.90	9.5	sock	sm	.	208
53	880519	3	e	2005	2015	10	0.98	9.5	chin	fr	.	1
53	880519	3	e	2005	2015	10	0.98	9.5	chum	fr	.	7
53	880519	3	e	2005	2015	10	0.98	9.5	lamp	.	.	1
53	880519	3	e	2005	2015	10	0.98	9.5	sock	sm	.	18
53	880519	4	d	2036	2046	10	1.00	9.5	chin	fr	.	2
53	880519	4	d	2036	2046	10	1.00	9.5	chin	sm	.	2
53	880519	4	d	2036	2046	10	1.00	9.5	chum	fr	.	4
53	880519	4	d	2036	2046	10	1.00	9.5	lamp	.	.	4
53	880519	4	d	2036	2046	10	1.00	9.5	sock	sm	.	430
53	880519	5	c	2116	2126	10	1.00	9.5	chin	sm	.	3
53	880519	5	c	2116	2126	10	1.00	9.5	chum	fr	.	6
53	880519	5	c	2116	2126	10	1.00	9.5	sock	sm	.	1959
54	880525	1	d	737	747	10	0.90	10.0	chin	fr	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
54	880525	1	d	737	747	10	0.90	10.0	chin	sm	.	5
54	880525	1	d	737	747	10	0.90	10.0	coho	sm	.	2
54	880525	1	d	737	747	10	0.90	10.0	lamp	.	.	1
54	880525	1	d	737	747	10	0.90	10.0	rain	sm	.	1
54	880525	1	d	737	747	10	0.90	10.0	sock	sm	.	107
54	880525	2	e	820	830	10	0.90	10.0	chin	fr	.	1
54	880525	2	e	820	830	10	0.90	10.0	chin	sm	.	9
54	880525	2	e	820	830	10	0.90	10.0	coho	sm	.	1
54	880525	2	e	820	830	10	0.90	10.0	sock	sm	.	57
54	880525	3	a	906	916	10	1.00	10.0	chin	fr	.	6
54	880525	3	a	906	916	10	1.00	10.0	chin	sm	.	8
54	880525	3	a	906	916	10	1.00	10.0	chum	fr	.	2
54	880525	3	a	906	916	10	1.00	10.0	coho	fr	.	1
54	880525	3	a	906	916	10	1.00	10.0	coho	sm	.	7
54	880525	3	a	906	916	10	1.00	10.0	coho	sm	h	1
54	880525	3	a	906	916	10	1.00	10.0	peam	.	.	1
54	880525	3	a	906	916	10	1.00	10.0	rain	sm	.	1
54	880525	3	a	906	916	10	1.00	10.0	sock	sm	.	20
54	880525	3	a	906	916	10	1.00	10.0	star	.	.	1
54	880525	4	c	955	1005	10	1.00	10.0	chin	fr	.	2
54	880525	4	c	955	1005	10	1.00	10.0	chin	sm	.	14
54	880525	4	c	955	1005	10	1.00	10.0	coho	sm	.	7
54	880525	4	c	955	1005	10	1.00	10.0	coho	sm	h	1
54	880525	4	c	955	1005	10	1.00	10.0	peam	.	.	2
54	880525	4	c	955	1005	10	1.00	10.0	sock	sm	.	267
54	880525	5	b	1046	1056	10	1.00	10.0	chin	sm	.	4
54	880525	5	b	1046	1056	10	1.00	10.0	coho	sm	.	4
54	880525	5	b	1046	1056	10	1.00	10.0	rain	sm	h	1
54	880525	5	b	1046	1056	10	1.00	10.0	sock	sm	.	20
55	880530	1	a	1557	1607	10	1.00	10.5	chin	fr	.	1
55	880530	1	a	1557	1607	10	1.00	10.5	coho	sm	.	4
55	880530	1	a	1557	1607	10	1.00	10.5	sock	sm	.	4
55	880530	2	b	1629	1639	10	0.98	10.5	chin	fr	.	1
55	880530	2	b	1629	1639	10	0.98	10.5	chin	sm	.	5
55	880530	2	b	1629	1639	10	0.98	10.5	chum	fr	.	2
55	880530	2	b	1629	1639	10	0.98	10.5	coho	sm	.	3
55	880530	2	b	1629	1639	10	0.98	10.5	peam	.	.	1
55	880530	2	b	1629	1639	10	0.98	10.5	sock	sm	.	4
55	880530	3	c	1703	1713	10	1.00	10.5	chin	sm	.	8
55	880530	3	c	1703	1713	10	1.00	10.5	chum	fr	.	8
55	880530	3	c	1703	1713	10	1.00	10.5	coho	sm	.	2
55	880530	3	c	1703	1713	10	1.00	10.5	coho	sm	h	2
55	880530	3	c	1703	1713	10	1.00	10.5	rain	sm	.	1
55	880530	3	c	1703	1713	10	1.00	10.5	sock	sm	.	19
55	880530	4	d	1746	1806	20	1.00	10.5	chin	fr	.	1
55	880530	4	d	1746	1806	20	1.00	10.5	chin	sm	.	10

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
55	880530	4	d	1746	1806	20	1.00	10.5	chum	fr	.	10
55	880530	4	d	1746	1806	20	1.00	10.5	coho	sm	.	3
55	880530	4	d	1746	1806	20	1.00	10.5	rain	sm	.	1
55	880530	4	d	1746	1806	20	1.00	10.5	sock	sm	.	23
55	880530	5	e	1839	1854	15	1.02	10.5	chin	sm	.	3
55	880530	5	e	1839	1854	15	1.02	10.5	chum	fr	.	5
55	880530	5	e	1839	1854	15	1.02	10.5	coho	sm	.	2
55	880530	5	e	1839	1854	15	1.02	10.5	rain	sm	.	1
55	880530	5	e	1839	1854	15	1.02	10.5	sock	fr	.	1
55	880530	6	a	1917	1928	11	1.10	10.5	chin	sm	.	14
55	880530	6	a	1917	1928	11	1.10	10.5	chin	sm	h	1
55	880530	6	a	1917	1928	11	1.10	10.5	chum	fr	.	13
55	880530	6	a	1917	1928	11	1.10	10.5	coho	sm	.	8
55	880530	6	a	1917	1928	11	1.10	10.5	peam	.	.	1
55	880530	6	a	1917	1928	11	1.10	10.5	sock	sm	.	10
55	880530	7	c	1945	2000	15	1.19	10.5	chin	fr	.	1
55	880530	7	c	1945	2000	15	1.19	10.5	chin	sm	.	5
55	880530	7	c	1945	2000	15	1.19	10.5	chum	fr	.	4
55	880530	7	c	1945	2000	15	1.19	10.5	coho	fr	.	1
55	880530	7	c	1945	2000	15	1.19	10.5	coho	sm	h	1
55	880530	7	c	1945	2000	15	1.19	10.5	coho	sm	.	2
55	880530	7	c	1945	2000	15	1.19	10.5	sock	sm	.	2
56	880601	1	b	838	848	10	1.00	10.0	chin	sm	.	10
56	880601	1	b	838	848	10	1.00	10.0	coho	sm	.	1
56	880601	1	b	838	848	10	1.00	10.0	lamp	.	.	1
56	880601	1	b	838	848	10	1.00	10.0	peam	.	.	1
56	880601	1	b	838	848	10	1.00	10.0	sock	sm	.	13
56	880601	2	c	920	930	10	1.16	10.0	chin	sm	.	15
56	880601	2	c	920	930	10	1.16	10.0	chum	fr	.	3
56	880601	2	c	920	930	10	1.16	10.0	rain	sm	h	1
56	880601	2	c	920	930	10	1.16	10.0	sock	sm	.	36
56	880601	3	d	959	1009	10	1.05	10.0	chin	sm	.	7
56	880601	3	d	959	1009	10	1.05	10.0	chum	fr	.	1
56	880601	3	d	959	1009	10	1.05	10.0	coho	sm	.	1
56	880601	3	d	959	1009	10	1.05	10.0	lamp	.	.	3
56	880601	3	d	959	1009	10	1.05	10.0	sock	sm	.	22
56	880601	4	e	1037	1047	10	1.13	10.0	chin	sm	.	9
56	880601	4	e	1037	1047	10	1.13	10.0	lamp	.	.	1
56	880601	4	e	1037	1047	10	1.13	10.0	rain	sm	.	1
56	880601	4	e	1037	1047	10	1.13	10.0	sock	sm	.	16
56	880601	5	a	1108	1128	20	1.05	10.0	chin	sm	.	6
56	880601	5	a	1108	1128	20	1.05	10.0	chum	fr	.	2
56	880601	5	a	1108	1128	20	1.05	10.0	coho	sm	.	2
56	880601	5	a	1108	1128	20	1.05	10.0	lamp	.	.	1
56	880601	5	a	1108	1128	20	1.05	10.0	peam	.	.	1
56	880601	5	a	1108	1128	20	1.05	10.0	sock	sm	.	9

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
57	880603	1	a	1919	1934	15	1.17	10	chin	fr	.	3
57	880603	1	a	1919	1934	15	1.17	10	chin	sm	.	33
57	880603	1	a	1919	1934	15	1.17	10	chum	fr	.	1
57	880603	1	a	1919	1934	15	1.17	10	coho	sm	.	5
57	880603	1	a	1919	1934	15	1.17	10	sock	sm	.	7
57	880603	2	b	1959	2014	15	1.07	10	chin	sm	.	11
57	880603	2	b	1959	2014	15	1.07	10	chin	sm	h	2
57	880603	2	b	1959	2014	15	1.07	10	chum	fr	.	45
57	880603	2	b	1959	2014	15	1.07	10	coho	sm	.	1
57	880603	2	b	1959	2014	15	1.07	10	sock	sm	.	2
57	880603	3	e	2032	2052	20	1.05	10	chin	sm	.	5
57	880603	3	e	2032	2052	20	1.05	10	chin	sm	h	2
57	880603	3	e	2032	2052	20	1.05	10	chum	fr	.	1
57	880603	3	e	2032	2052	20	1.05	10	coho	sm	.	3
57	880603	3	e	2032	2052	20	1.05	10	sock	sm	.	15
57	880603	4	c	2111	2131	20	1.02	10	chin	sm	.	6
57	880603	4	c	2111	2131	20	1.02	10	chum	fr	.	6
57	880603	4	c	2111	2131	20	1.02	10	coho	sm	.	2
57	880603	4	c	2111	2131	20	1.02	10	lamp	.	.	2
57	880603	4	c	2111	2131	20	1.02	10	sock	sm	.	94
57	880603	5	d	2157	2214	17	1.07	10	chin	sm	.	2
57	880603	5	d	2157	2214	17	1.07	10	chum	fr	.	4
57	880603	5	d	2157	2214	17	1.07	10	lamp	.	.	1
57	880603	5	d	2157	2214	17	1.07	10	sock	sm	.	26
58	880606	1	a	2138	2151	13	1.04	11	chin	sm	.	2
58	880606	1	a	2138	2151	13	1.04	11	sock	sm	.	1
58	880606	2	b	2212	2228	16	0.90	11	chin	sm	.	3
58	880606	2	b	2212	2228	16	0.90	11	chum	fr	.	1
58	880606	3	c	2250	2310	20	1.05	11	chin	sm	.	2
58	880606	3	c	2250	2310	20	1.05	11	chum	fr	.	8
58	880606	3	c	2250	2310	20	1.05	11	coho	sm	.	1
58	880606	3	c	2250	2310	20	1.05	11	rain	sm	.	2
58	880606	3	c	2250	2310	20	1.05	11	sock	sm	.	4
58	880606	4	e	2358	18	20	0.90	11	chin	sm	.	3
58	880606	4	e	2358	18	20	0.90	11	chum	fr	.	7
58	880606	4	e	2358	18	20	0.90	11	lamp	.	.	1
58	880606	4	e	2358	18	20	0.90	11	peam	.	.	1
58	880606	4	e	2358	18	20	0.90	11	sock	sm	.	4
58	880607	5	d	37	57	20	1.02	11	chin	sm	.	4
58	880607	5	d	37	57	20	1.02	11	chin	sm	h	1
58	880607	5	d	37	57	20	1.02	11	chum	fr	.	3
58	880607	5	d	37	57	20	1.02	11	coho	sm	.	1
58	880607	5	d	37	57	20	1.02	11	sock	sm	.	8
58	880607	5	d	37	57	20	1.02	11	star	.	.	1
59	880608	1	b	1029	1049	20	1.06	13	chin	sm	.	8
59	880608	1	b	1029	1049	20	1.06	13	chum	fr	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
59	880608	1	b	1029	1049	20	1.06	13.0	sock	sm	.	7
59	880608	2	a	1113	1133	20	1.02	13.0	chin	sm	.	23
59	880608	2	a	1113	1133	20	1.02	13.0	chin	sm	h	2
59	880608	2	a	1113	1133	20	1.02	13.0	peam	.	.	1
59	880608	2	a	1113	1133	20	1.02	13.0	sock	sm	.	15
59	880608	2	a	1113	1133	20	1.02	13.0	stic	ad	.	2
59	880608	3	c	1200	1220	20	1.20	13.0	chin	fr	.	1
59	880608	3	c	1200	1220	20	1.20	13.0	chin	sm	.	18
59	880608	3	c	1200	1220	20	1.20	13.0	chum	fr	.	1
59	880608	3	c	1200	1220	20	1.20	13.0	coho	sm	.	1
59	880608	3	c	1200	1220	20	1.20	13.0	sock	sm	.	52
59	880608	4	d	1244	1304	20	0.99	13.0	chin	sm	.	28
59	880608	4	d	1244	1304	20	0.99	13.0	chum	fr	.	1
59	880608	4	d	1244	1304	20	0.99	13.0	coho	sm	.	2
59	880608	4	d	1244	1304	20	0.99	13.0	sock	sm	.	101
59	880608	5	e	1340	1400	20	1.00	13.0	chin	sm	.	20
59	880608	5	e	1340	1400	20	1.00	13.0	chin	sm	h	2
59	880608	5	e	1340	1400	20	1.00	13.0	chum	fr	.	1
59	880608	5	e	1340	1400	20	1.00	13.0	coho	sm	.	1
59	880608	5	e	1340	1400	20	1.00	13.0	rain	sm	.	1
59	880608	5	e	1340	1400	20	1.00	13.0	sock	sm	.	4
59	880608	5	e	1340	1400	20	1.00	13.0	stic	ad	.	1
60	880613	1	a	1712	1730	18	1.02	13.5	chin	sm	.	13
60	880613	1	a	1712	1730	18	1.02	13.5	chin	sm	h	2
60	880613	1	a	1712	1730	18	1.02	13.5	chum	fr	.	8
60	880613	1	a	1712	1730	18	1.02	13.5	coho	sm	.	7
60	880613	1	a	1712	1730	18	1.02	13.5	rain	sm	h	1
60	880613	1	a	1712	1730	18	1.02	13.5	sock	sm	.	7
60	880613	2	b	1757	1817	20	1.06	13.5	chin	sm	.	14
60	880613	2	b	1757	1817	20	1.06	13.5	chum	fr	.	5
60	880613	2	b	1757	1817	20	1.06	13.5	coho	sm	.	3
60	880613	2	b	1757	1817	20	1.06	13.5	sock	sm	.	5
60	880613	3	c	1852	1912	20	1.03	13.5	chin	sm	.	16
60	880613	3	c	1852	1912	20	1.03	13.5	chin	sm	h	1
60	880613	3	c	1852	1912	20	1.03	13.5	chum	fr	.	6
60	880613	3	c	1852	1912	20	1.03	13.5	coho	sm	.	1
60	880613	3	c	1852	1912	20	1.03	13.5	rain	fr	.	1
60	880613	3	c	1852	1912	20	1.03	13.5	sock	sm	.	23
60	880613	4	d	1940	2000	20	1.07	13.5	chin	sm	.	8
60	880613	4	d	1940	2000	20	1.07	13.5	chin	sm	h	1
60	880613	4	d	1940	2000	20	1.07	13.5	chum	fr	.	4
60	880613	4	d	1940	2000	20	1.07	13.5	sock	sm	.	4
60	880613	5	e	2025	2045	20	0.97	13.5	chin	sm	.	5
60	880613	5	e	2025	2045	20	0.97	13.5	chum	fr	.	1
60	880613	5	e	2025	2045	20	0.97	13.5	sock	sm	.	2
61	880615	1	a	1825	1842	17	0.95	14.5	chin	fr	.	1

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61	880615	1	a	1825	1842	17	0.95	14.5	chin	sm	.	8
61	880615	1	a	1825	1842	17	0.95	14.5	coho	sm	.	2
61	880615	1	a	1825	1842	17	0.95	14.5	coho	sm	h	1
61	880615	1	a	1825	1842	17	0.95	14.5	sock	fr	.	14
61	880615	1	a	1825	1842	17	0.95	14.5	sock	sm	.	5
61	880615	1	a	1825	1842	17	0.95	14.5	stic	ad	.	2
61	880615	2	b	1907	1927	20	0.90	14.5	chin	fr	.	1
61	880615	2	b	1907	1927	20	0.90	14.5	chin	sm	.	5
61	880615	2	b	1907	1927	20	0.90	14.5	chin	sm	h	2
61	880615	2	b	1907	1927	20	0.90	14.5	coho	sm	.	1
61	880615	2	b	1907	1927	20	0.90	14.5	sock	fr	.	4
61	880615	2	b	1907	1927	20	0.90	14.5	sock	sm	.	1
61	880615	2	b	1907	1927	20	0.90	14.5	stic	ad	.	2
61	880615	3	c	1952	2012	20	0.97	14.5	chin	sm	.	6
61	880615	3	c	1952	2012	20	0.97	14.5	coho	sm	.	1
61	880615	3	c	1952	2012	20	0.97	14.5	lamp	.	.	1
61	880615	3	c	1952	2012	20	0.97	14.5	sock	fr	.	5
61	880615	3	c	1952	2012	20	0.97	14.5	sock	sm	.	23
61	880615	4	d	2042	2102	20	0.90	14.5	sock	sm	.	3
61	880615	5	e	2120	2145	25	0.92	14.5	chin	fr	.	1
61	880615	5	e	2120	2145	25	0.92	14.5	chin	sm	.	1
61	880615	5	e	2120	2145	25	0.92	14.5	chum	fr	.	2
62	880620	1	a	2016	2036	20	0.95	14.5	chin	sm	.	3
62	880620	1	a	2016	2036	20	0.95	14.5	chin	sm	h	1
62	880620	1	a	2016	2036	20	0.95	14.5	sock	fr	.	6
62	880620	1	a	2016	2036	20	0.95	14.5	sock	sm	.	1
62	880620	1	a	2016	2036	20	0.95	14.5	stic	ad	.	5
62	880620	2	b	2106	2126	20	0.96	14.5	chin	sm	h	1
62	880620	2	b	2106	2126	20	0.96	14.5	chin	sm	.	1
62	880620	2	b	2106	2126	20	0.96	14.5	lamp	.	.	1
62	880620	3	c	2148	2208	20	1.06	14.5	chin	sm	.	2
62	880620	3	c	2148	2208	20	1.06	14.5	chin	sm	h	1
62	880620	3	c	2148	2208	20	1.06	14.5	lamp	.	.	5
62	880620	3	c	2148	2208	20	1.06	14.5	sock	fr	.	1
62	880620	3	c	2148	2208	20	1.06	14.5	sock	sm	.	4
62	880620	4	d	2230	2250	20	1.04	14.5	chin	sm	.	1
62	880620	4	d	2230	2250	20	1.04	14.5	lamp	.	.	1
62	880620	5	e	2308	2328	20	0.95	14.5	sock	fr	.	2
62	880620	5	e	2308	2328	20	0.95	14.5	sock	sm	.	1
62	880620	5	e	2308	2328	20	0.95	14.5	stic	ad	.	1
63	880624	1	a	1143	1155	12	1.00	14.0	chin	sm	.	13
63	880624	1	a	1143	1155	12	1.00	14.0	coho	sm	.	2
63	880624	1	a	1143	1155	12	1.00	14.0	sock	sm	.	12
63	880624	2	b	1237	1257	20	0.98	14.0	chin	sm	.	5
63	880624	2	b	1237	1257	20	0.98	14.0	chum	fr	.	1
63	880624	2	b	1237	1257	20	0.98	14.0	sock	fr	.	13

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
63	880624	2	b	1237	1257	20	0.98	14	sock	sm	.	7
63	880624	3	c	1322	1342	20	1.01	14	chin	fr	.	1
63	880624	3	c	1322	1342	20	1.01	14	chin	sm	.	10
63	880624	3	c	1322	1342	20	1.01	14	coho	sm	h	1
63	880624	3	c	1322	1342	20	1.01	14	coho	sm	.	1
63	880624	3	c	1322	1342	20	1.01	14	sock	fr	.	11
63	880624	3	c	1322	1342	20	1.01	14	sock	sm	.	2
63	880624	3	c	1322	1342	20	1.01	14	suck	.	.	1
63	880624	4	d	1413	1435	22	1.03	14	chin	sm	.	5
63	880624	4	d	1413	1435	22	1.03	14	coho	sm	.	1
63	880624	4	d	1413	1435	22	1.03	14	sock	fr	.	6
63	880624	4	d	1413	1435	22	1.03	14	sock	sm	.	2
63	880624	5	e	1459	1519	20	1.02	14	chin	sm	.	1
64	880627	1	a	1629	1649	20	0.94	14	chin	fr	.	1
64	880627	1	a	1629	1649	20	0.94	14	chin	sm	.	7
64	880627	1	a	1629	1649	20	0.94	14	chin	sm	h	1
64	880627	1	a	1629	1649	20	0.94	14	coho	sm	.	1
64	880627	1	a	1629	1649	20	0.94	14	lamp	.	.	2
64	880627	1	a	1629	1649	20	0.94	14	pink	fr	.	1
64	880627	1	a	1629	1649	20	0.94	14	sock	fr	.	53
64	880627	1	a	1629	1649	20	0.94	14	sock	sm	.	12
64	880627	1	a	1629	1649	20	0.94	14	stic	ad	.	6
64	880627	2	b	1723	1746	23	0.98	14	chin	fr	.	2
64	880627	2	b	1723	1746	23	0.98	14	chin	sm	.	10
64	880627	2	b	1723	1746	23	0.98	14	chin	sm	h	2
64	880627	2	b	1723	1746	23	0.98	14	coho	sm	.	2
64	880627	2	b	1723	1746	23	0.98	14	sock	fr	.	48
64	880627	2	b	1723	1746	23	0.98	14	sock	sm	.	7
64	880627	3	c	1849	1909	20	1.01	14	chin	fr	.	1
64	880627	3	c	1849	1909	20	1.01	14	chin	sm	.	8
64	880627	3	c	1849	1909	20	1.01	14	coho	sm	.	1
64	880627	3	c	1849	1909	20	1.01	14	peam	.	.	1
64	880627	3	c	1849	1909	20	1.01	14	sock	fr	.	7
64	880627	3	c	1849	1909	20	1.01	14	sock	sm	.	6
64	880627	4	d	1937	1957	20	0.99	14	chin	sm	.	1
64	880627	4	d	1937	1957	20	0.99	14	sock	sm	.	3
64	880627	5	e	2015	2035	20	1.00	14	chin	sm	.	3
64	880627	5	e	2015	2035	20	1.00	14	squa	.	.	1
64	880627	5	e	2015	2035	20	1.00	14	stic	ad	.	1
65	880629	1	a	1804	1819	15	0.95	14	chin	sm	.	6
65	880629	1	a	1804	1819	15	0.95	14	sock	fr	.	4
65	880629	1	a	1804	1819	15	0.95	14	sock	sm	.	1
65	880629	1	a	1804	1819	15	0.95	14	stic	ad	.	2
65	880629	2	b	1836	1856	20	0.99	14	chin	sm	.	3
65	880629	2	b	1836	1856	20	0.99	14	chin	sm	h	1
65	880629	2	b	1836	1856	20	0.99	14	sock	fr	.	7

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65	880629	2	b	1836	1856	20	0.99	14.0	sock	sm	.	1
65	880629	3	c	1919	1939	20	1.06	14.0	chin	sm	.	13
65	880629	3	c	1919	1939	20	1.06	14.0	chin	sm	h	3
65	880629	3	c	1919	1939	20	1.06	14.0	rain	sm	.	1
65	880629	3	c	1919	1939	20	1.06	14.0	sock	fr	.	10
65	880629	3	c	1919	1939	20	1.06	14.0	stic	ad	.	5
65	880629	4	d	2001	2021	20	1.03	14.0	chin	sm	.	3
65	880629	4	d	2001	2021	20	1.03	14.0	sock	sm	.	1
65	880629	5	e	2036	2056	20	1.00	14.0	chin	fr	.	2
65	880629	5	e	2036	2056	20	1.00	14.0	squa	.	.	2
66	880704	1	a	2010	2024	14	0.97	14.5	chin	sm	.	10
66	880704	1	a	2010	2024	14	0.97	14.5	sock	fr	.	11
66	880704	1	a	2010	2024	14	0.97	14.5	sock	sm	.	2
66	880704	1	a	2010	2024	14	0.97	14.5	stic	ad	.	3
66	880704	2	b	2051	2108	17	1.07	14.5	chin	sm	.	1
66	880704	2	b	2051	2108	17	1.07	14.5	peam	.	.	3
66	880704	2	b	2051	2108	17	1.07	14.5	sock	fr	.	6
66	880704	2	b	2051	2108	17	1.07	14.5	stic	ad	.	4
66	880704	3	c	2128	2147	19	0.98	14.5	chin	sm	.	3
66	880704	3	c	2128	2147	19	0.98	14.5	peam	.	.	2
66	880704	3	c	2128	2147	19	0.98	14.5	sock	fr	.	3
66	880704	3	c	2128	2147	19	0.98	14.5	sock	sm	.	1
66	880704	3	c	2128	2147	19	0.98	14.5	stic	ad	.	5
66	880704	4	d	2207	2225	18	1.01	14.5	chin	sm	.	1
66	880704	4	d	2207	2225	18	1.01	14.5	chin	sm	h	1
66	880704	4	d	2207	2225	18	1.01	14.5	lamp	.	.	5
66	880704	4	d	2207	2225	18	1.01	14.5	stic	ad	.	1
66	880704	5	e	2244	2300	16	1.03	14.5	chin	sm	.	2
66	880704	5	e	2244	2300	16	1.03	14.5	stic	ju	.	2
67	880707	1	a	1206	1226	20	1.13	15.0	chin	sm	.	62
67	880707	1	a	1206	1226	20	1.13	15.0	sock	sm	.	23
67	880707	1	a	1206	1226	20	1.13	15.0	squa	.	.	1
67	880707	1	a	1206	1226	20	1.13	15.0	stic	.	.	101
67	880707	2	b	1300	1320	20	1.07	15.0	chin	sm	.	45
67	880707	2	b	1300	1320	20	1.07	15.0	sock	fr	.	12
67	880707	2	b	1300	1320	20	1.07	15.0	stic	.	.	50
67	880707	3	c	1346	1406	20	1.09	15.0	chin	sm	.	26
67	880707	3	c	1346	1406	20	1.09	15.0	peam	.	.	1
67	880707	3	c	1346	1406	20	1.09	15.0	sock	fr	.	10
67	880707	3	c	1346	1406	20	1.09	15.0	sock	sm	.	3
67	880707	3	c	1346	1406	20	1.09	15.0	stic	.	.	2
67	880707	4	d	1426	1446	20	1.09	15.0	chin	sm	.	20
67	880707	4	d	1426	1446	20	1.09	15.0	coho	sm	.	1
67	880707	4	d	1426	1446	20	1.09	15.0	peam	.	.	1
67	880707	4	d	1426	1446	20	1.09	15.0	sock	fr	.	15
67	880707	4	d	1426	1446	20	1.09	15.0	sock	sm	.	5

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
67	880707	4	d	1426	1446	20	1.09	15	stic	.	.	6
67	880707	5	e	1510	1521	11	0.97	15	chin	sm	.	10
67	880707	5	e	1510	1521	11	0.97	15	peam	.	.	4
67	880707	5	e	1510	1521	11	0.97	15	sock	fr	.	10
67	880707	5	e	1510	1521	11	0.97	15	stic	.	.	2
68	880711	1	a	1635	1647	12	0.94	15	chin	sm	.	7
68	880711	1	a	1635	1647	12	0.94	15	sock	fr	.	2
68	880711	1	a	1635	1647	12	0.94	15	stic	ad	.	1
68	880711	2	b	1718	1737	19	0.97	15	chin	sm	.	12
68	880711	2	b	1718	1737	19	0.97	15	sock	fr	.	21
68	880711	2	b	1718	1737	19	0.97	15	sock	sm	.	2
68	880711	3	c	1800	1815	15	1.03	15	chin	sm	.	6
68	880711	3	c	1800	1815	15	1.03	15	sock	fr	.	2
68	880711	4	d	1837	1851	14	1.00	15	chin	sm	.	10
68	880711	4	d	1837	1851	14	1.00	15	sock	fr	.	2
68	880711	5	e	1915	1935	20	1.07	15	chin	sm	.	6
68	880711	5	e	1915	1935	20	1.07	15	sock	fr	.	5
68	880711	5	e	1915	1935	20	1.07	15	sock	sm	.	3
69	880714	1	e	1811	1826	15	1.12	16	chin	sm	.	2
69	880714	1	e	1811	1826	15	1.12	16	peam	.	.	1
69	880714	1	e	1811	1826	15	1.12	16	sock	sm	.	2
69	880714	1	e	1811	1826	15	1.12	16	stic	ad	.	2
69	880714	2	d	1838	1853	15	1.00	16	peam	.	.	1
69	880714	2	d	1838	1853	15	1.00	16	sock	sm	.	2
69	880714	3	c	1916	1931	15	1.12	16	chin	sm	.	1
69	880714	3	c	1916	1931	15	1.12	16	peam	.	.	1
69	880714	3	c	1916	1931	15	1.12	16	sock	sm	.	2
69	880714	3	c	1916	1931	15	1.12	16	stic	ad	.	1
69	880714	4	b	1948	2003	15	1.13	16	chin	sm	.	1
69	880714	4	b	1948	2003	15	1.13	16	sock	sm	.	3
69	880714	4	b	1948	2003	15	1.13	16	stic	ad	.	2
69	880714	5	a	2023	2038	15	1.00	16	chin	fr	.	1
69	880714	5	a	2023	2038	15	1.00	16	chin	sm	.	2
69	880714	5	a	2023	2038	15	1.00	16	peam	.	.	1
69	880714	5	a	2023	2038	15	1.00	16	sock	sm	.	1
69	880714	5	a	2023	2038	15	1.00	16	stic	.	.	7
70	880718	1	a	1814	1834	20	1.03	16	chin	sm	.	21
70	880718	1	a	1814	1834	20	1.03	16	chum	fr	.	1
70	880718	1	a	1814	1834	20	1.03	16	coho	sm	.	2
70	880718	1	a	1814	1834	20	1.03	16	sock	sm	.	23
70	880718	1	a	1814	1834	20	1.03	16	stic	.	.	10
70	880718	2	b	1912	1932	20	1.04	16	chin	sm	.	8
70	880718	2	b	1912	1932	20	1.04	16	sock	sm	.	13
70	880718	2	b	1912	1932	20	1.04	16	stic	.	.	2
70	880718	3	c	1958	2018	20	1.02	16	chin	sm	.	6
70	880718	3	c	1958	2018	20	1.02	16	lfsm	.	.	1

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
70	880718	3	c	1958	2018	20	1.02	16	peam	.	.	1
70	880718	3	c	1958	2018	20	1.02	16	sock	sm	.	3
70	880718	3	c	1958	2018	20	1.02	16	stic	.	.	3
70	880718	4	d	2102	2116	14	1.02	16	peam	.	.	4
70	880718	4	d	2102	2116	14	1.02	16	sock	sm	.	2
70	880718	4	d	2102	2116	14	1.02	16	stic	ju	.	5
70	880718	5	e	2136	2150	14	1.12	16	chin	sm	.	1
70	880718	5	e	2136	2150	14	1.12	16	sock	sm	.	1
70	880718	5	e	2136	2150	14	1.12	16	stic	.	.	7
71	880721	1	a	922	942	20	1.02	.	chin	sm	.	2
71	880721	1	a	922	942	20	1.02	.	peam	.	.	1
71	880721	1	a	922	942	20	1.02	.	sock	sm	.	41
71	880721	1	a	922	942	20	1.02	.	stic	.	.	10
71	880721	2	e	1005	1025	20	0.99	.	chin	sm	.	1
71	880721	2	e	1005	1025	20	0.99	.	peam	.	.	2
71	880721	2	e	1005	1025	20	0.99	.	rain	sm	.	1
71	880721	2	e	1005	1025	20	0.99	.	sock	sm	.	13
71	880721	2	e	1005	1025	20	0.99	.	stic	.	.	3
71	880721	3	d	1042	1107	25	1.12	.	chin	sm	.	6
71	880721	3	d	1042	1107	25	1.12	.	sock	sm	.	13
71	880721	3	d	1042	1107	25	1.12	.	squa	.	.	2
71	880721	3	d	1042	1107	25	1.12	.	stic	.	.	3
71	880721	4	c	1125	1145	20	1.02	.	chin	sm	.	8
71	880721	4	c	1125	1145	20	1.02	.	chin	sm	h	1
71	880721	4	c	1125	1145	20	1.02	.	sock	sm	.	6
71	880721	4	c	1125	1145	20	1.02	.	stic	.	.	2
71	880721	5	b	1221	1241	20	1.03	.	chin	sm	.	8
71	880721	5	b	1221	1241	20	1.03	.	sock	sm	.	24
71	880721	5	b	1221	1241	20	1.03	.	stic	.	.	3
72	880726	1	e	1709	1723	14	1.00	17	chin	sm	.	6
72	880726	1	e	1709	1723	14	1.00	17	sock	sm	.	2
72	880726	1	e	1709	1723	14	1.00	17	stic	ad	.	1
72	880726	2	d	1747	1802	15	1.00	17	chin	sm	.	6
72	880726	2	d	1747	1802	15	1.00	17	sock	sm	.	2
72	880726	2	d	1747	1802	15	1.00	17	stic	ad	.	1
72	880726	3	c	1825	1845	20	0.90	17	brid	.	.	1
72	880726	3	c	1825	1845	20	0.90	17	chin	sm	.	4
72	880726	3	c	1825	1845	20	0.90	17	sock	sm	.	4
72	880726	4	b	1905	1925	20	1.05	17	chin	sm	.	1
72	880726	4	b	1905	1925	20	1.05	17	sock	sm	.	7
72	880726	5	a	1943	2000	17	1.06	17	chin	sm	.	2
72	880726	5	a	1943	2000	17	1.06	17	sock	sm	.	2
73	880729	1	a	452	505	13	1.04	17	peam	.	.	2
73	880729	1	a	452	505	13	1.04	17	sock	sm	.	1
73	880729	1	a	452	505	13	1.04	17	squa	.	.	1
73	880729	2	b	525	545	20	1.10	17	sock	sm	.	3

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TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
73	880729	2	b	525	545	20	1.10	17.0	stic	.	.	1
73	880729	3	c	603	626	23	1.01	17.0	chin	sm	.	2
73	880729	3	c	603	626	23	1.01	17.0	stic	.	.	1
73	880729	4	d	651	714	23	1.04	17.0	chin	sm	.	3
73	880729	4	d	651	714	23	1.04	17.0	reds	.	.	1
73	880729	4	d	651	714	23	1.04	17.0	sock	sm	.	1
73	880729	4	d	651	714	23	1.04	17.0	stic	.	.	3
73	880729	5	e	732	802	30	1.02	17.0	peam	.	.	1
73	880729	5	e	732	802	30	1.02	17.0	sock	sm	.	12
73	880729	5	e	732	802	30	1.02	17.0	stic	.	.	1
74	880803	1	a	1321	1341	20	0.92	18.0	chin	sm	.	6
74	880803	1	a	1321	1341	20	0.92	18.0	sock	sm	.	2
74	880803	2	b	1405	1435	30	1.05	18.0	chin	sm	.	3
74	880803	2	b	1405	1435	30	1.05	18.0	peam	.	.	2
74	880803	2	b	1405	1435	30	1.05	18.0	sock	sm	.	3
74	880803	2	b	1405	1435	30	1.05	18.0	stic	ju	.	1
74	880803	3	c	1455	1525	30	1.06	18.0	chin	sm	.	2
74	880803	3	c	1455	1525	30	1.06	18.0	lamp	.	.	1
74	880803	3	c	1455	1525	30	1.06	18.0	peam	.	.	4
74	880803	3	c	1455	1525	30	1.06	18.0	sock	sm	.	7
74	880803	3	c	1455	1525	30	1.06	18.0	stic	ju	.	8
74	880803	4	d	1552	1622	30	1.10	18.0	chin	sm	.	1
74	880803	4	d	1552	1622	30	1.10	18.0	sock	sm	.	6
74	880803	4	d	1552	1622	30	1.10	18.0	stic	ju	.	2
74	880803	5	e	1640	1710	30	1.01	18.0	peam	.	.	1
74	880803	5	e	1640	1710	30	1.01	18.0	sock	sm	.	2
74	880803	5	e	1640	1710	30	1.01	18.0	squa	.	.	2
74	880803	5	e	1640	1710	30	1.01	18.0	stic	ju	.	3
75	880805	1	a	932	952	20	1.04	18.5	chin	sm	.	2
75	880805	1	a	932	952	20	1.04	18.5	peam	.	.	7
75	880805	1	a	932	952	20	1.04	18.5	sock	sm	.	1
75	880805	1	a	932	952	20	1.04	18.5	squa	.	.	1
75	880805	1	a	932	952	20	1.04	18.5	stic	ad	.	1
75	880805	1	a	932	952	20	1.04	18.5	stic	ju	.	3
75	880805	2	b	1014	1046	32	1.10	18.5	chin	sm	.	1
75	880805	2	b	1014	1046	32	1.10	18.5	coho	sm	.	1
75	880805	2	b	1014	1046	32	1.10	18.5	sock	sm	.	1
75	880805	2	b	1014	1046	32	1.10	18.5	stic	ad	.	1
75	880805	3	c	1105	1135	30	1.00	18.5	chin	sm	.	3
75	880805	3	c	1105	1135	30	1.00	18.5	peam	.	.	1
75	880805	3	c	1105	1135	30	1.00	18.5	sock	sm	.	2
75	880805	3	c	1105	1135	30	1.00	18.5	stic	ad	.	3
75	880805	3	c	1105	1135	30	1.00	18.5	stic	ju	.	1
75	880805	4	d	1156	1216	20	1.04	18.5	chin	sm	.	1
75	880805	4	d	1156	1216	20	1.04	18.5	peam	.	.	3
75	880805	4	d	1156	1216	20	1.04	18.5	sock	sm	.	2

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75	880805	4	d	1156	1216	20	1.04	18.5	stic	ju	.	1
75	880805	5	e	1236	1256	20	1.00	18.5	chin	sm	.	3
75	880805	5	e	1236	1256	20	1.00	18.5	sock	sm	.	4
76	880808	1	a	1215	1239	24	1.10	18.5	chin	sm	.	2
76	880808	1	a	1215	1239	24	1.10	18.5	sock	sm	.	1
76	880808	1	a	1215	1239	24	1.10	18.5	squa	.	.	1
76	880808	1	a	1215	1239	24	1.10	18.5	stic	ad	.	3
76	880808	1	a	1215	1239	24	1.10	18.5	stic	ju	.	1
76	880808	2	b	1300	1327	27	1.05	18.5	chin	fr	.	1
76	880808	2	b	1300	1327	27	1.05	18.5	chin	sm	.	2
76	880808	2	b	1300	1327	27	1.05	18.5	sock	fr	.	1
76	880808	2	b	1300	1327	27	1.05	18.5	sock	sm	.	4
76	880808	2	b	1300	1327	27	1.05	18.5	stic	ad	.	1
76	880808	3	c	1348	1418	30	1.00	18.5	chin	sm	.	8
76	880808	3	c	1348	1418	30	1.00	18.5	peam	.	.	1
76	880808	3	c	1348	1418	30	1.00	18.5	sock	sm	.	2
76	880808	3	c	1348	1418	30	1.00	18.5	stic	ad	.	1
76	880808	3	c	1348	1418	30	1.00	18.5	stic	ju	.	5
76	880808	4	d	1438	1456	18	1.04	18.5	chin	sm	.	1
76	880808	4	d	1438	1456	18	1.04	18.5	sock	sm	.	4
76	880808	4	d	1438	1456	18	1.04	18.5	squa	.	.	1
76	880808	4	d	1438	1456	18	1.04	18.5	stic	ju	.	1
76	880808	5	e	1517	1530	13	1.00	18.5	peam	.	.	1
76	880808	5	e	1517	1530	13	1.00	18.5	sock	ad	.	1
76	880808	5	e	1517	1530	13	1.00	18.5	sock	sm	.	2
76	880808	5	e	1517	1530	13	1.00	18.5	star	.	.	1
76	880808	5	e	1517	1530	13	1.00	18.5	stic	ju	.	1
77	880811	1	d	654	724	30	1.20	17.0	sock	sm	.	1
77	880811	1	d	654	724	30	1.20	17.0	stic	ad	.	1
77	880811	2	c	742	812	30	1.15	17.0	chin	sm	.	3
77	880811	2	c	742	812	30	1.15	17.0	sock	sm	.	2
77	880811	2	c	742	812	30	1.15	17.0	stic	ad	.	4
77	880811	3	b	833	903	30	1.03	17.0	chin	sm	.	1
77	880811	3	b	833	903	30	1.03	17.0	sock	sm	.	1
77	880811	3	b	833	903	30	1.03	17.0	stic	ad	.	3
77	880811	4	a	921	951	30	0.90	17.0	chin	sm	.	1
77	880811	4	a	921	951	30	0.90	17.0	peam	.	.	1
77	880811	4	a	921	951	30	0.90	17.0	sock	sm	.	3
77	880811	4	a	921	951	30	0.90	17.0	stic	ad	.	7
77	880811	4	a	921	951	30	0.90	17.0	stic	ju	.	39
77	880811	5	e	1009	1039	30	1.13	17.0	chin	sm	.	1
77	880811	5	e	1009	1039	30	1.13	17.0	peam	.	.	3
77	880811	5	e	1009	1039	30	1.13	17.0	sock	sm	.	1
77	880811	5	e	1009	1039	30	1.13	17.0	stic	ad	.	6
78	880815	1	c	829	859	30	1.01	17.0	peam	.	.	1
78	880815	1	c	829	859	30	1.01	17.0	stic	ad	.	3

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78	880815	2	d	914	944	30	1.08	17	sock	sm	.	1
78	880815	2	d	914	944	30	1.08	17	stic	ad	.	3
78	880815	3	e	956	1024	28	1.05	17	peam	.	.	2
78	880815	3	e	956	1024	28	1.05	17	sock	sm	.	1
78	880815	3	e	956	1024	28	1.05	17	stic	ad	.	5
78	880815	4	b	1040	1110	30	1.10	17	peam	.	.	2
78	880815	4	b	1040	1110	30	1.10	17	sock	sm	.	1
78	880815	4	b	1040	1110	30	1.10	17	stic	ad	.	1
78	880815	4	b	1040	1110	30	1.10	17	stic	ju	.	1
78	880815	5	a	1124	1154	30	1.10	17	peam	.	.	22
78	880815	5	a	1124	1154	30	1.10	17	reds	.	.	2
78	880815	5	a	1124	1154	30	1.10	17	sock	sm	.	1
78	880815	5	a	1124	1154	30	1.10	17	stic	ad	.	3
78	880815	5	a	1124	1154	30	1.10	17	stic	ju	.	2
79	880818	1	a	838	851	13	1.03	18	lssu	.	.	1
79	880818	1	a	838	851	13	1.03	18	peam	.	.	5
79	880818	2	b	909	929	20	1.01	18	chin	sm	.	1
79	880818	2	b	909	929	20	1.01	18	doll	ad	.	1
79	880818	2	b	909	929	20	1.01	18	peam	.	.	1
79	880818	2	b	909	929	20	1.01	18	sock	sm	.	1
79	880818	3	c	946	1008	22	1.04	18	sock	sm	.	1
79	880818	3	c	946	1008	22	1.04	18	stic	ad	.	1
79	880818	4	d	1025	1053	28	1.02	18	chin	sm	.	2
79	880818	4	d	1025	1053	28	1.02	18	sock	sm	.	2
79	880818	4	d	1025	1053	28	1.02	18	stic	ad	.	2
79	880818	4	d	1025	1053	28	1.02	18	stic	ju	.	2
79	880818	5	e	1119	1144	25	0.90	18	peam	.	.	8
79	880818	5	e	1119	1144	25	0.90	18	stic	ad	.	1
80	880823	1	a	1344	1352	8	1.06	17	peam	.	.	16
80	880823	2	a	1435	1450	15	1.01	17	peam	.	.	5
80	880823	3	b	1511	1530	19	1.06	17	peam	.	.	2
80	880823	3	b	1511	1530	19	1.06	17	sock	sm	.	1
80	880823	3	b	1511	1530	19	1.06	17	stic	ad	.	1
80	880823	4	b	1547	1557	10	1.18	17	peam	.	.	1
80	880823	4	b	1547	1557	10	1.18	17	sock	sm	.	1
80	880823	4	b	1547	1557	10	1.18	17	stic	ad	.	1
80	880823	5	e	1613	1625	12	1.02	17	peam	.	.	8
80	880823	5	e	1613	1625	12	1.02	17	sock	sm	.	2
80	880823	6	e	1643	1655	12	1.04	17	sock	sm	.	4
80	880823	6	e	1643	1655	12	1.04	17	stic	ad	.	3
80	880823	7	c	1746	1800	14	1.10	17	peam	.	.	2
80	880823	8	d	1818	1833	15	1.04	17	sock	sm	.	1
81	880826	1	a	627	652	25	1.00	17	peam	.	.	7
81	880826	1	a	627	652	25	1.00	17	squa	.	.	2
81	880826	1	a	627	652	25	1.00	17	stic	ad	.	3
81	880826	2	e	710	743	33	1.00	17	peam	.	.	1

CATCH DATA - SURFACE TRAWLING
FRASER RIVER AT QUEENS REACH, 1987 - 1988

TRIP	DATE	TOW	LINE	NETIN	NETOUT	LTOW	FLOW	SURFT	SPECIES	STAGE	ORIGIN	NUMBER
81	880826	2	e	710	743	33	1.00	17	squa	.	.	1
81	880826	3	d	757	827	30	1.22	17	.	.	.	0
81	880826	4	b	845	915	30	1.04	17	peam	.	.	1
81	880826	4	b	845	915	30	1.04	17	sock	fr	.	1
81	880826	4	b	845	915	30	1.04	17	stic	ad	.	1
81	880826	5	c	931	1001	30	1.00	17	stic	ad	.	1
82	880831	1	a	658	712	14	1.02	18	chin	fr	.	1
82	880831	1	a	658	712	14	1.02	18	reds	.	.	1
82	880831	1	a	658	712	14	1.02	18	stic	ad	.	1
82	880831	2	b	729	744	15	0.98	18	lfsm	.	.	1
82	880831	2	b	729	744	15	0.98	18	peam	.	.	3
82	880831	2	b	729	744	15	0.98	18	sock	sm	.	1
82	880831	2	b	729	744	15	0.98	18	stic	ad	.	1
82	880831	3	e	801	820	19	0.95	18	star	.	.	1
82	880831	3	e	801	820	19	0.95	18	stic	ad	.	3
82	880831	3	e	801	820	19	0.95	18	stic	ju	.	1
82	880831	4	d	858	913	15	0.96	18	stic	ad	.	2
82	880831	5	c	932	947	15	1.10	18	.	.	.	0

Table 4. Summary of coded wire tag data from trawl caught salmonids captured at Queens Reach, Fraser River during 1988.

Table 4. Summary of coded wire tag data from trawl caught salmonids captured at Queens Reach, Fraser River during 1988.

SAMPLE DATE	TRIP	TOW	LINE	SPECIES	BROOD (YR)	HATCHERY ORIGIN	LENGTH (mm)	WEIGHT (g)	CWT CODE
880511	49	1	C	COHO	1987	SALMON R.	95	8.36	2-49-38
880511	49	2	E	CHIN	1987	PENNY	110	13.70	2-41-20
880516	51	1	A	CHIN	1986	QUESNEL R.	63	2.68	2-47-57
880516	51	3	C	CHIN	1986	QUESNEL R.	69	3.56	2-47-59
880516	51	5	E	CHIN	1986	EAGLE R.	130	23.74	2-42-2
880518	52	4	C	COHO	1986	EAGLE R.	107	11.04	2-43-30
880519	53	2	B	COHO	1986	CHEHALIS R.	130	22.44	2-48-55
880525	54	3	A	COHO	1986	CHEHALIS R.	128	19.18	2-48-54
880525	54	4	C	COHO	1986	CHEHALIS R.	120	16.20	2-48-54
880530	55	3	C	COHO	1986	INCH CR.	118	14.12	2-46-32
880530	55	3	C	COHO	1986	EAGLE R.	130	19.00	2-41-34
880530	55	6	A	CHIN	1987	CHILLIWACK	85	5.94	2-51-61
880530	55	7	C	COHO	1986	INCH CR.	121	17.04	2-51-13
880603	57	2	B	CHIN	1987	CHILLIWACK	79	4.98	2-51-59
880603	57	2	B	CHIN	1987	CHEHALIS R.	72	3.58	2-47-41
880603	57	3	E	CHIN	1987	CHILLIWACK	91	9.22	2-51-57
880603	57	3	E	CHIN	1987	SPIUS CR.	92	8.72	2-52-1
880607	58	5	D	CHIN	1986	QUESNEL R.	94	9.00	2-47-50
880608	59	2	A	CHIN	1987	CHILLIWACK	73	4.42	2-55-42-R1
880608	59	2	A	CHIN	1987	CHILLIWACK	82	6.24	2-55-42-R3
880608	59	5	E	CHIN	1987	QUESNEL R.	78	5.34	2-51-4
880608	59	5	E	CHIN	1987	CHILLIWACK	76	4.60	2-55-42-R2
880613	60	1	A	CHIN	1986	BIRKENHEAD	119	19.90	2-47-25
880613	60	1	A	CHIN	1986	QUESNEL R.	83	7.04	2-47-59
880613	60	3	C	CHIN	1987	QUESNEL R.	79	4.94	2-51-3
880613	60	4	D	CHIN	1987	SPIUS CR.	106	14.46	2-52-3
880615	61	1	A	COHO	1986	CLEARWATER	109	14.52	2-43-22
880615	61	2	B	CHIN	1987	INCH CR.	108	14.02	2-47-28
880615	61	2	B	CHIN	1986	QUESNEL R.	97	9.44	2-47-45
880620	62	1	A	CHIN	1986	QUESNEL R.	92	9.90	2-47-56
880620	62	2	B	CHIN	1987	QUESNEL R.	85	7.08	2-51-6
880620	62	3	C	CHIN	1986	QUESNEL R.	80	6.80	2-47-56
880624	63	3	C	COHO	1986	CLEARWATER	108	12.02	2-43-22
880627	64	1	A	CHIN	1987	QUESNEL R.	91	8.66	2-51-6
880627	64	2	B	CHIN	1987	EAGLE R.	93	9.90	2-54-21
880627	64	2	B	CHIN	1987	SHUSWAP R.	92	9.62	2-53-43
880629	65	3	C	CHIN	1987	CLEARWATER	94	10.88	2-55-19-R2
880629	65	3	C	CHIN	1987	QUESNEL R.	91	9.66	2-51-5
880629	65	3	C	CHIN	1986	QUESNEL R.	79	6.24	2-47-55
880629	65	2	B	CHIN	1987	CLEARWATER	98	11.74	2-55-19-R3
880704	66	4	D	CHIN	1987	QUESNEL R.	100	11.70	2-51-8
880721	71	4	C	CHIN	1987	CLEARWATER	99	12.40	2-55-19-R3

Figure 1. Location of surface trawl study site on the Fraser River at Queens Reach during 1987-1988.

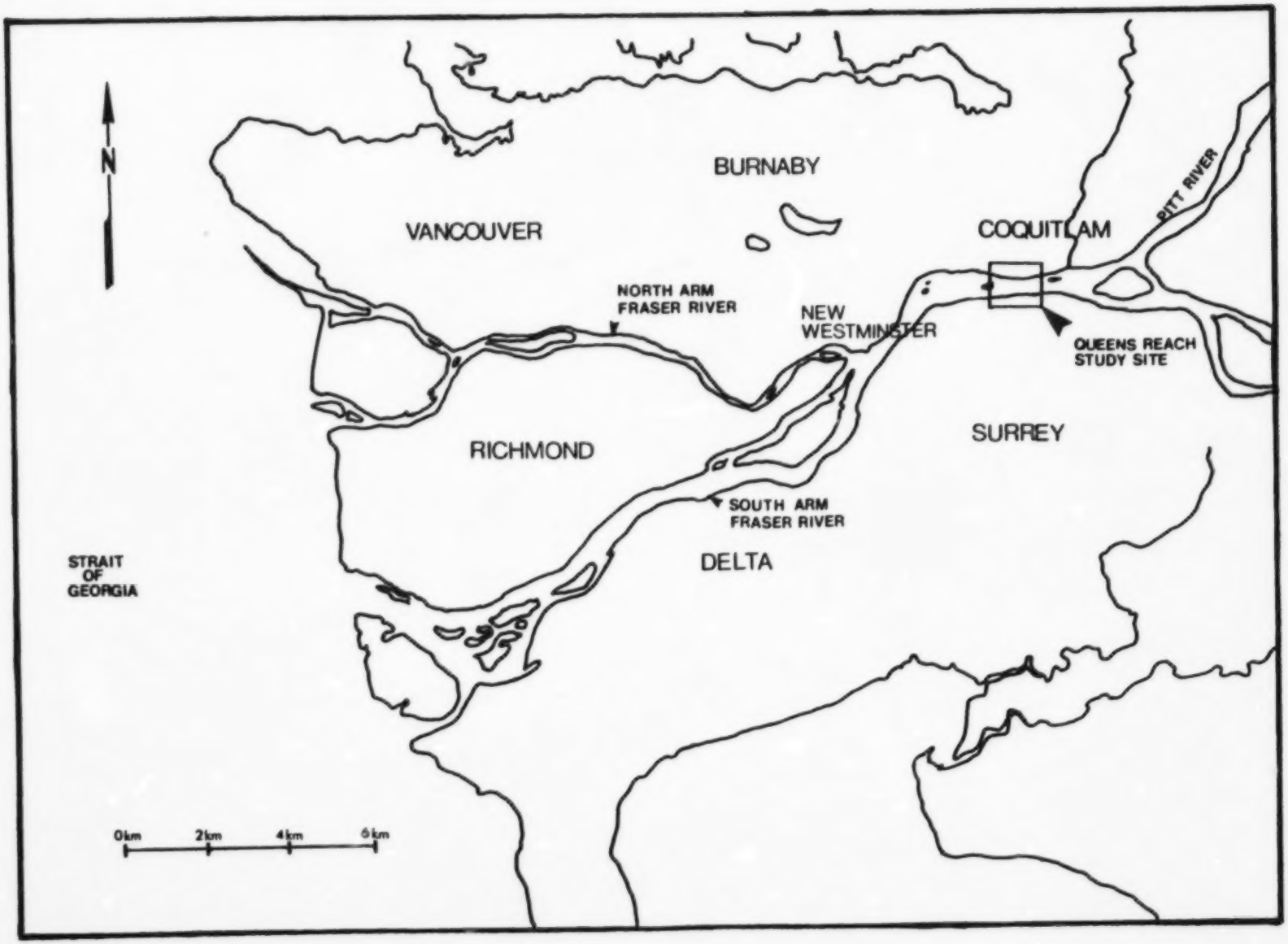

N
BURNABY
VANCOUVER
COQUITLAM
PITT RIVER
NORTH ARM
FRASER RIVER
NEW
WESTMINSTER
QUEENS REACH
STUDY SITE
SURREY
RICHMOND
SOUTH ARM
FRASER RIVER
DELTA
STRAIT
OF
GEORGIA
0km
2km
4km
6km

Figure 2. Location of sampling transects on the Fraser River at Queens Reach during 1987-1988.

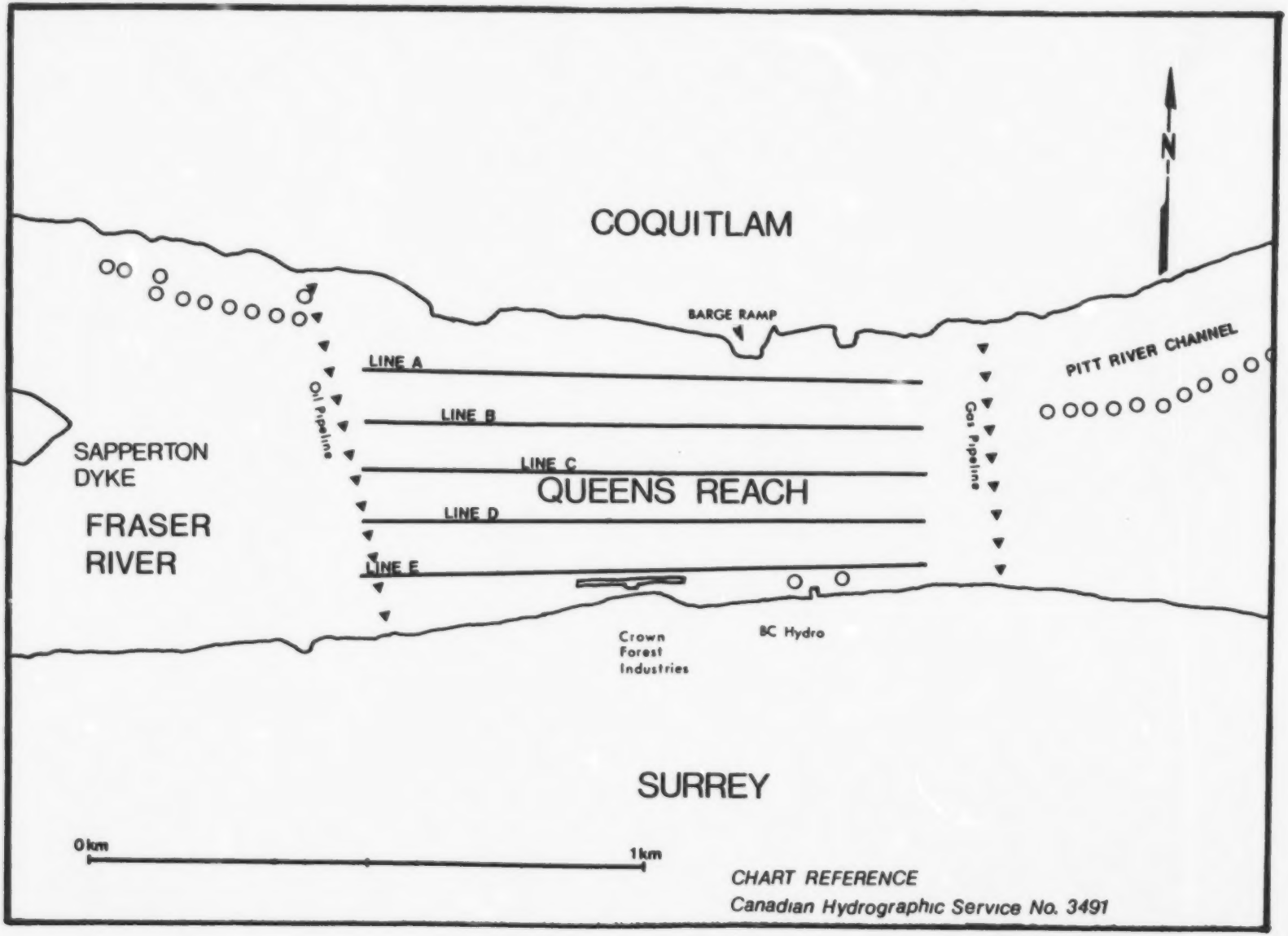

COQUITLAM
N
BARGE RAMP
PITT RIVER CHANNEL
LINE A
LINE B
LINE C
LINE D
LINE E
Oil Pipeline
Gas Pipeline
SAPPERTON
DYKE
FRASER
RIVER
QUEENS REACH
Crown
Forest
Industries
BC Hydro
SURREY
0km
1km
CHART REFERENCE
Canadian Hydrographic Service No. 3491

Figure 3. Panel dimensions of the trawl net employed on the Fraser River.

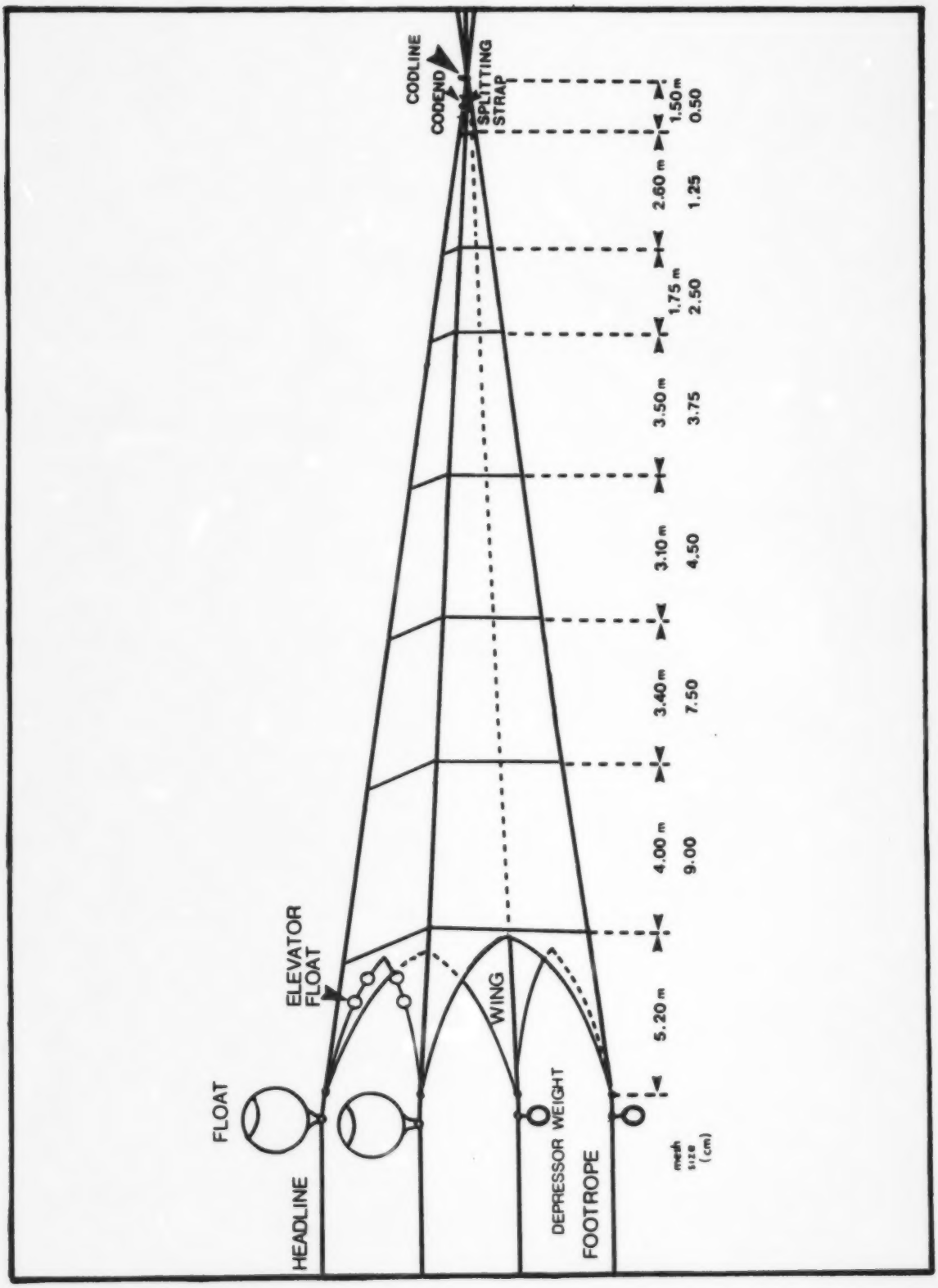
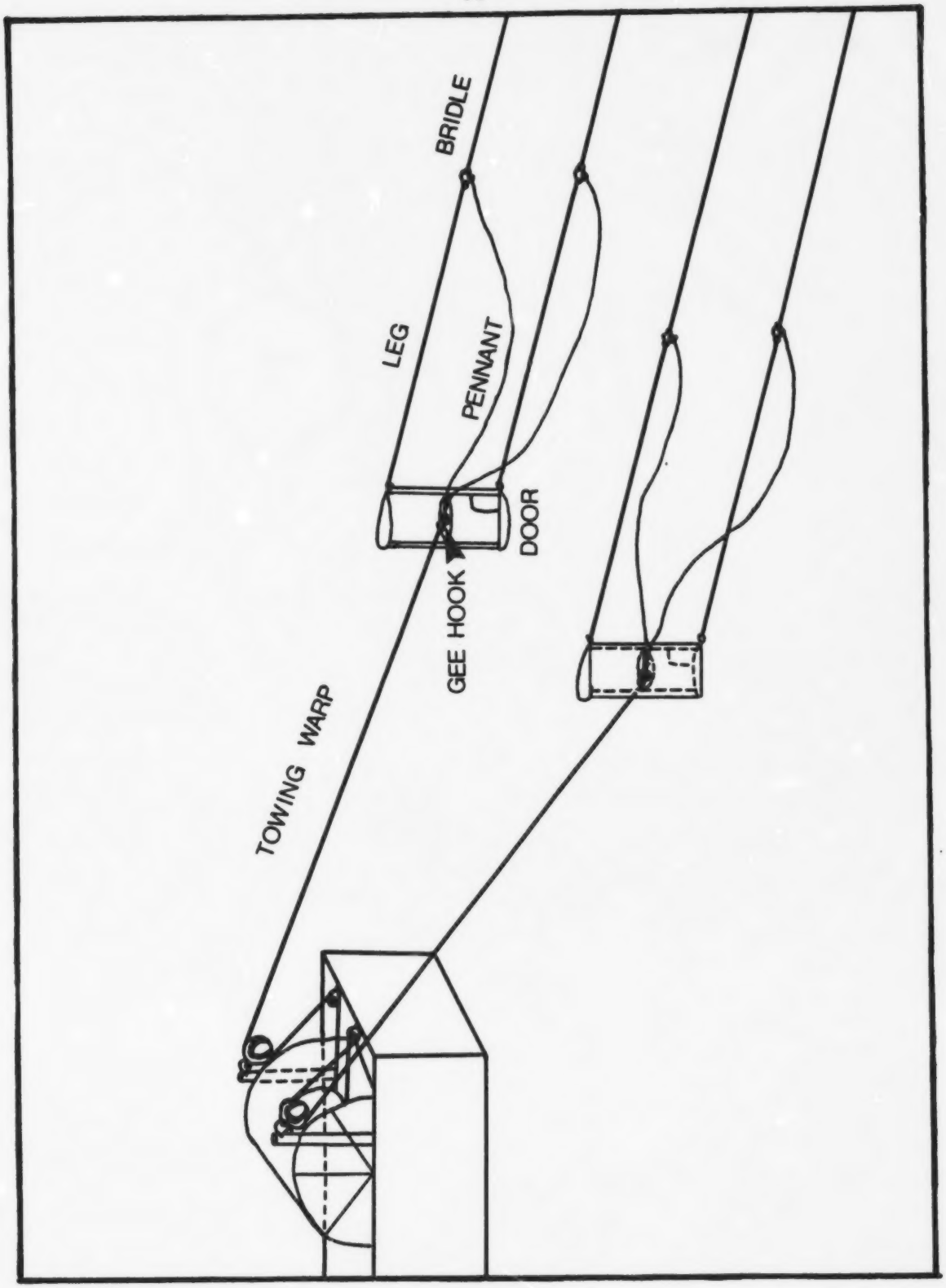

CODLINE
CODEND
SPLITTING STRAP
1.50m
0.50
2.60 m
1.25
1.75 m
2.50
3.50 m
3.75
3.10 m
4.50
3.40 m
7.50
4.00 m
9.00
5.20 m
mesh size (cm)
ELEVATOR FLOAT
WING
FLOAT
DEPRESSOR WEIGHT
HEADLINE
FOOTROPE

Figure 4. Schematic diagram of the method used to rig the surface trawl gear.


BRIDLE
LEG
PENNANT
DOOR
GEE HOOK
TOWING WARP